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REVISION OF THE NEARCTIC SPECIES OF *SILIS* (CANTHARIDAE: COLEOPTERA)

By

John Wagener Green

California Academy of Sciences, San Francisco, California, 94118

The latest revision of the Nearctic species of *Silis* was published in 1918 by Van Dyke, who recognized 19 named taxa in the subgenus *Silis* and 8 in the subgenus *Ditemnus*. Since then only 2 new ones have been added, by Fender and Brown. Van Dyke separated the species solely on the basis of the pronotal armature of the males. It has been found that a number of his so-called species of *Silis* in the strict sense are actually evolutionary complexes depending almost entirely on the male genitalia for the identification of their components. A preliminary analysis of this totally unexplored field is the primary objective of this study. It has proved to be a taxonomic problem of very great difficulty.

The genus *Silis,* as at present constituted, is defined, in addition to the longitudinally divided eighth ventral segment common to all Silini, by the excised and modified lateral margins of the male pronota. The ramifications of this structure are so elaborate and varied that no rigid statement can be made that would include all of them. In general, the region of the posterior angles is excised, retracting these angles, and forming an angular prominence in front; while the excision is occupied by a posterior process arising from the hypomera. The angular prominence will be designated hereinafter as the anterior process. It is strictly marginal, and the term does not apply to any prominence or elevated area not extending to the lateral margin. Very little external structural diversity occurs elsewhere in the body.

Two subgenera are found in the Nearctic fauna: *Silis* (strict sense) and *Ditemnus*. *Plectonotum*, of the Leng catalogue, is not a subgenus of *Silis*. The Arizona species assigned thereto by Schaeffer is a member of the *Discodon-Polemius* association, with numerous related forms in the Mexican fauna.

Silis (strict sense) occurs in Europe and Canada, and throughout most of the United States, but apparently not south of the Mexican border. *Ditemnus,* except for two species in eastern United States, is of southern distribution: Texas to California; and south through Mexico, and Central and South America. The propriety of assigning subgeneric status to *Ditemnus* is seriously questioned, but no change in the generic structure of the Silini is proposed at this time. A new, and perhaps significant, differential is given in the subgeneric key that follows. The species are quite constant in color pattern and structure, and are easily identified.

The male genitalia of *Ditemnus* are small, usually fragile, and structurally difficult to visualize. They have not been investigated in this study. In the genitalia of *Silis* (strict sense), as in most of the Cantharidae, the aedeagus arises within a largely sclerotized tegmen that has been considered a modification of the basal piece. It is suggested that the tegmen is an invaginated ninth abdominal segment that is visible externally only in the exposed tip of ventral segment nine, sometimes called the genital segment. In support of this contention, it should be noted that ventral segment 9 is attached to the underside of the tegmen near the base, and no dorsal or pleural parts of segment 9 are present, other than the tegmen itself. Comparing this to the structure of segment 9 in the related families *Lampyridae* and *Lycidae,* it is seen that in these two families ventral segment 9 unites with a dorsopleural portion to form a homogeneous structure completely inclosing the aedeagus.

The upper surface of the tegmen, designated hereinafter as the dorsal plate, is membranous except for a sclerotized distal portion. Its posterior margin is usually emarginate, with the emargination more or less unstable intraspecifically, and rarely entirely lacking. Sometimes the emarginate area is abruptly inflexed so the notch is posterior and does not show from a direct dorsal viewpoint. Lateral incisures separate a ventral lobe from the main body of the tegmen. The ventral lobe is not prominently emarginate, usually rounded or subangulate apically, or with at most a small median notch. In several specimens a deep and narrow emargination has been noted in the ventral lobe, supposedly fractures resulting from pressure. The tegmen is subject to considerable intraspecific variability in many of the details of its conformation, and differential characters derived therefrom cannot be rigidly interpreted.

In all the species there arise from the inner base of the tegmen, above the aedeagus, strongly sclerotized dual processes that may be separated throughout; or united basally, separating at or beyond the middle of their length; or completely united to form a single median process, or sometimes a broad plate. These processes, or basal apophyses, will be designated hereinafter as basophyses. They are directed backward and upward, their tips usually attaining the underside of the dorsal plate, or sometimes passing through its emargination. It is impossible to get a direct or completely unobstructed view

of these structures, so their delineation in the drawings is more or less diagrammatic.

The parameres of the aedeagus are of two radically different types, which would seem to constitute subgeneric division except that no external differentials are available. In one type, exemplified by *S. difficilis,* the parameres extend in a partially sclerotized process along either side of the median lobe nearly to its apex, and appearing to constitute an integral part thereof. In the second type, exemplified by *S. cava,* the parameres are shorter and visible, if at all, only toward the base of the median lobe, but are provided each side with a long and usually slender sclerotized process extending to or beyond the tip of the median lobe. These processes, or lateral apophyses, will be designated hereinafter as the laterophyses. Apparently they are capable of a limited rotary motion around a longitudinal axis, thereby altering their appearance from a fixed viewpoint.

Complete eversion of the internal sac of the aedeagus is highly desirable in canthárid studies, but this situation is rarely found in cabinet specimens. Drying distortion and varying degrees of expansion produce varying aspects of the median lobe, and these are responsible for most of the major difficulties encountered in a taxonomic analysis. The author has endeavored to limit the announcement of new species to those taxa in which the genitalia are positively distinctive; and to those more closely related forms in which apparent differences in the median lobe seem to be conclusive, provided that other structural characters and geographic isolation also are involved. A difficult situation, constantly recurring in all the evolutionary complexes, is the necessity of deciding whether an observable difference is due to normal intraspecific variability, or to valid interspecific differentiation. Such decisions are herein based on a study of sizable series, and on the general experience gained from endless observations throughout the genus. It seems likely, however, that final solutions will be found only when a practical method is discovered for everting the internal sac of the aedeagus in dried specimens.

In extracting the genitalia, it has been found impractical to try to press them out through the anus, except for recently collected individuals in a perfectly relaxed condition. The specimens must be thoroughly relaxed, three days in a very wet relaxing dish is not too much time for older ones. Abdominal segments 6 to 9 are removed, and dorsals 6 and 7 are opened with a chisel-pointed needle. Water should be applied as needed, to prevent drying and to act as a lubricant. By prying with the needle and pressing on both sides with the tweezers, the genitalia will usually come out readily, backwards. It is essential not to apply pressure along the median line because of the danger of breaking the fragile processes of the aedeagus. It is the author's practice to mount the genitalia upright on a paper point, together with the detached

abdominal part, and to pin this below the specimen. Upright mounting insures an unobstructed dorsal, lateral, and ventral view.

In addition to the extensive collections of the California Academy of Sciences (indicated as CAS), valuable material and other assistance was received from the following institutions and individuals, to all of whom the author extends his sincere thanks and appreciation. The abbreviation symbols in parentheses are used in the text to indicate the present location of certain specimens.

(ANSP)—Academy of Natural Sciences of Philadelphia, H. J. Grant, Jr.
(AMNH)—American Museum of Natural History, J. G. Rozen, Jr.
(CNC)—Canadian National Collection, H. F. Howden.
(CU)—Cornell University, Henry Dietrich.
(LAM)—Los Angeles County Museum, R. R. Snelling.
(MCZ)—Museum of Comparative Zoology, P. J. Darlington, Jr.
(OSU)—Ohio State University, J. N. Knull, P. H. Freytag.
(OrSU)—Oregon State University, J. D. Lattin.
(SDNH)—San Diego Natural History Museum, C. F. Harbison.
(USNM)—U. S. National Museum, T. J. Spilman.
(UBC)—University of British Columbia, G. J. Spencer.
(UCB)—University of California at Berkeley, Jerry Powell.
(UCD)—University of California at Davis, A. T. McClay.
(UCR)—University of California at Riverside, Saul Frommer.
(UId)—University of Idaho, W. F. Barr.
(UK)—University of Kansas, G. W. Byers.
(UW)—University of Washington, M. H. Hatch.
Jane C. Dirks-Edmunds.
J. Gordon Edwards.
Kenneth M. Fender.
Gayle L. Nelson.
Joe Schuh.
P. H. Timberlake.
Vladimir Vosyka, Czechoslovakia.

All the keys that follow apply to males only. No attempt has been made at this time to identify females of the subgenus *Silis*. Usually no trouble will be encountered in placing *Ditemnus* females. The length-width ratio given in some species descriptions is intended as a rough indication of the body form. The head, usually deflexed, is not included in length measurements, which are more or less approximate.

Key to Nearctic Subgenera of *Silis*

Hypomera completely divided by a more or less undefined concavity or depression that follows a production of anterior margin of posterior process, the front part flat or con-

vex, punctate and pubescent. Notch formed by longitudinal division of ventral segment 8 closed, its sides parallel and largely contiguous along median line ..... *Ditemnus* LeConte

Hypomera not so divided, smooth, shining, and virtually glabrous, longitudinally concave. Notch formed by longitudinal division of ventral segment 8 open, V- or U-shaped ..... *Silis* Charpentier

SUBGENUS *DITEMNUS*

The Nearctic species of this subgenus divide into three well defined categories, which should all be accorded generic rank if that status is given to *Ditemnus*. Number I, containing two species, is *Ditemnus* LeConte (1861), with *D. bidentata* Say as the genotype. Category number II, numerously represented in the Neotropical fauna, and number III, largely Nearctic, are at present nameless. Two new species of the third category have the modified tarsal claws of the male finely cleft, while in all the other species of Nearctic *Ditemnus* these claws are appendiculate. Cleft claws have also been noted in the Cuban *D. marginella* DuVal. This alone is not regarded as a character of generic weight. The punctate and pubescent hypomera characteristic of this subgenus occur also, predominantly, in the *Discodon-Polemius* association, and have been noted in the Palearctic *Silas ruficollis* Fabricius. One of the new species, *S. howdeni,* will no doubt be otherwise disposed when the generic structure of the Silini is revised.

KEY TO NEARCTIC SPECIES OF THE SUBGENUS *DITEMNUS*, MALES

1. Form shorter and broader. Antennae stout. Disk of pronotum with median impression 2

   Form elongate. Antennae slender, subfiliform. Disk of pronotum without median impression 7

2. Disk of pronotum with shallow subreniform impression, deeper each side. Antennae subserrate. Fourth segment of front tarsi normal. Eastern and midwestern species 3

   Disk of pronotum with deep median fossa. Antennae subfiliform. Fourth segment of front tarsi larger than usual, subquadrate. Southwestern species 4

Category I

3. Posterior process of pronotal armature arising in advance of hind angles, which are subrectangular and rather well defined ..... (1) *S. (D.) bidentata* Say

   Posterior process of pronotal armature broader, overlapping hind angles which are rounded and indistinct ..... (2) *S. (D.) latiloba* Blatchley

Category II

4. Lateral border of elytra testaceous 5

   Elytra unicolorous, black 6

5. Sutural border of elytra testaceous ..... (3) *S. (D.) freemani* Brown

   Sutural border of elytra not testaceous ..... (4) *S. (D.) fossiger* LeConte

6. Pronotum pale, or with median dark area ..... (5) *S. (D.) tricornis* Van Dyke

   Pronotum pale with all borders black ..... (6) *S. (D.) obtusa* LeConte

Category III

7. Posterior process of pronotal armature continuous with base of pronotum, obscuring hind angles 8
   Posterior process arising in front of hind angles, which are well defined and subrectangular 9
8. Body entirely black. Pronotal incisure feeble. Modified tarsal claws appendiculate ..... (7) *S.* (*D.*) *howdeni* Green, new species
   Pronotum pale, incisure normal. Modified tarsal claws cleft ..... (8) *S.* (*D.*) *vandykei* Green, new species
9. Body entirely black ..... (9) *S.* (*D.*) *nigerrima* Schaeffer
   Pronotum pale, abdomen rufous or partly so 10
10. Antennal vestiture erect and bristling ..... (10) *S.* (*D.*) *perforata* LeConte
    Antennal vestiture decumbent 11
11. Legs black. Modified tarsal claws cleft. Eastern Texas ..... (11) *S.* (*D.*) *knulli* Green, new species
    Legs partly pale. Modified tarsal claws appendiculate. Arizona ..... (12) *S.* (*D.*) *abdominalis* Schaeffer

(1) Silis (Ditemnus) bidentata Say.

Cantharis bidentata Say, 1825, Jour. Acad. Nat. Sci. Philadelphia, vol. 5, p. 169.
Silis lepida LeConte, Dejean Cat., 3rd ed., p. 121 (*nomen nudum*).

Black, prothorax rufous, apical borders of ventral segments pale. Varies with head and abdomen more or less pale.

Length-width ratio about 2.2 : 1. Antennae stout, subserrate, about three-fourths as long as body, intermediate segments about one and one-third times as long as wide, vestiture short and decumbent. Pronotum as in figure 1P, posterior process narrower than in *S. latiloba,* arising in advance of hind angles which are subrectangular and rather well defined; disk with subreniform median impression deepest each side. Anterior claw of front tarsi with blunt exterior basal appendix, posterior claw simple; middle tarsi similar, appendix of anterior claw small and inconspicuous; hind tarsi with both claws simple. Length 3–3.5 mm.

Distribution. MAINE, NEW HAMPSHIRE, MASSACHUSETTS, RHODE ISLAND, CONNECTICUT, NEW YORK, PENNSYLVANIA, OHIO, NEW JERSEY, MARYLAND, DISTRICT OF COLUMBIA, VIRGINIA, WEST VIRGINIA, TENNESSEE, NORTH CAROLINA, SOUTH CAROLINA, GEORGIA, ALABAMA, MISSISSIPPI, FLORIDA, and OKLAHOMA (the last possibly an error).

(2) Silis (Ditemnus) latiloba Blatchley.

Silis latiloba Blatchley, 1910, Coleop. of Indiana, p. 837.

Black, prothorax rufous, apical borders of ventral segments pale. Varies with scutellum rufous; abdomen paler.

Length-width ratio about 2.2 : 1. Antennae stout, subserrate, about three-fifths as long as body, intermediate segments about one and one-half times as long as wide, vestiture short and decumbent. Pronotum as in figure 2P, posterior process broad, overlapping hind angles which are rounded and indistinct; disk with shallow subreniform median impression deepest each side. Anterior claw of front tarsi with blunt exterior basal appendix, posterior claw simple; middle tarsi similar, appendix of anterior claw small and inconspicuous; hind tarsi with both claws simple. Length 3.7–5 mm.

Distribution. KENTUCKY, OHIO, MICHIGAN, INDIANA, ILLINOIS, IOWA, WISCONSIN, MINNESOTA, MISSOURI, ARKANSAS, KANSAS, NEBRASKA, NORTH DAKOTA, TEXAS, MANITOBA.

(3) **Silis (Ditemnus) freemani** Brown.

Silis freemani Brown, 1940, Canadian Ent., vol. 72, p. 163.

Antennae and tips of palpi black. Head black posteriorly, pale in front. Pronotum and scutellum pale rufous. Elytra black; sutural borders narrowly, and lateral borders more widely, pale; pale color not extending around apex. Underside rufous anteriorly, metathorax black, abdomen largely black. Legs black, anterior femora pale basally; trochanters and coxae pale, the posterior more or less blackish.

Length-width ratio about 2.5 : 1. Antennae rather stout, about two-thirds as long as body, intermediate segments about twice as long as wide, vestiture short and decumbent. Pronotum as in figure 3P, with broad median fossa, median line impressed or excavated basally. Elytral pubescence somewhat longer and more erect distally. Anterior claw of front tarsi with blunt exterior basal appendix, all other claws simple. Tarsi stout, fourth segment of front tarsi larger than usual, subquadrate. Length 4–5 mm.

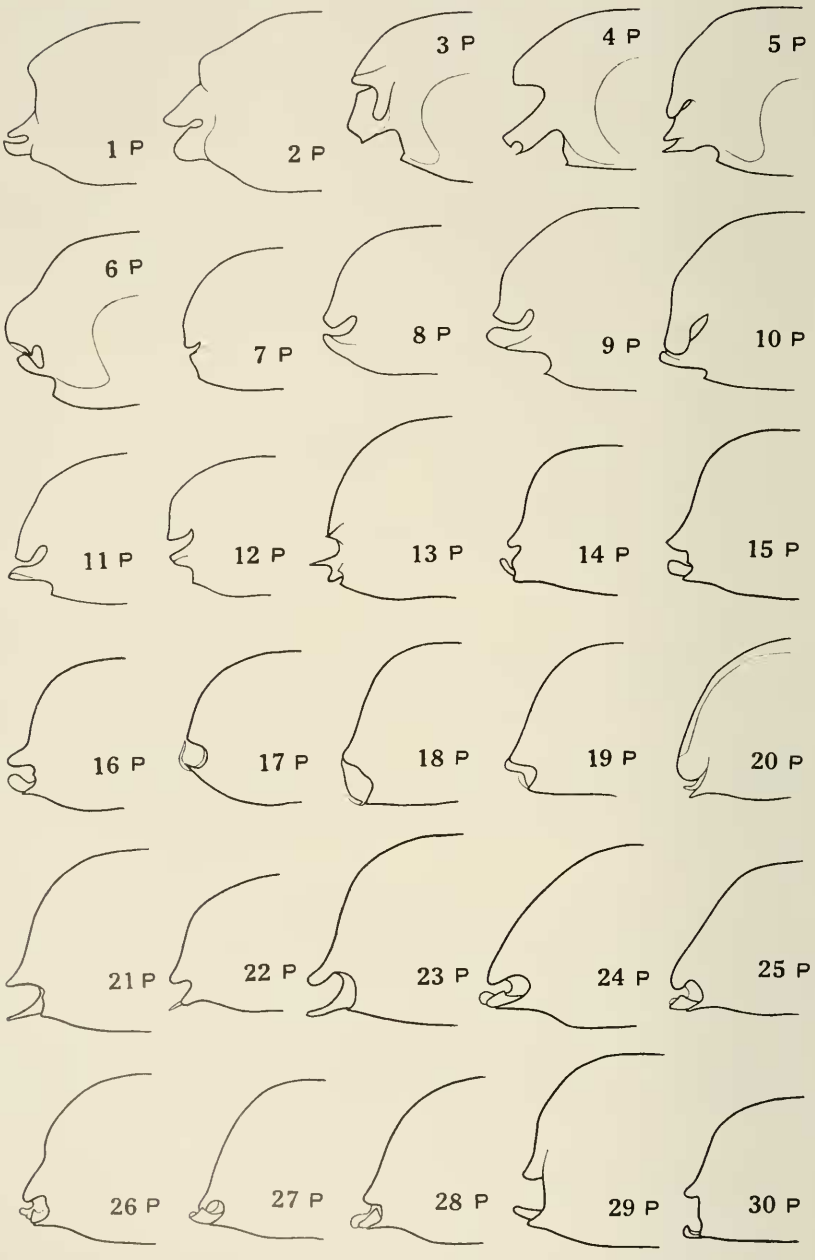
Distribution. TEXAS: *Cameron County: Brownsville; Hidalgo; Laredo; Mission.*

Specimens from Linares, Nuevo Leon, Mexico, identified as *Silis biauriculata* Champion, seen to be conspecific, differing externally in the backward extension of the anterior pronotal process being less developed. The genitalia of Mexican and Texas specimens seem to be similar, but they are so constructed that a comparison is difficult and inconclusive. H. S. Barber recognized this species as new to the United States fauna. He attached "glicki" type labels to USNM material, but did not publish on this. His specimens were intercepted at Brownsville and Laredo on agricultural imports from Mexico.

(4) **Silis (Ditemnus) fossiger** LeConte.

Silis fossiger LeConte, 1881, Trans. Amer. Ent. Soc., vol. 9, p. 58.

Antennae and tips of palpi black. Head black posteriorly, pale in front. Pronotum pale rufous, scutellum black. Elytra black, lateral borders narrowly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pale. Underside rufous, metathorax black, abdomen more or less dusky medially. Legs black, front coxae pale.

Length-width ratio about 2.5 : 1. Antennae rather stout, about three-fourths as long as body, intermediate segments about twice as long as wide, vestiture short and decumbent. Pronotum as in figure 4P, disk with broad median fossa. Anterior claw of front tarsi with blunt exterior basal appendix, all other claws simple. Tarsi stout, fourth segment of front tarsi larger than usual, subquadrate. Length 4–5 mm.

Distribution. TEXAS: *Devils River, Del Rio, Pleasanton.*

This species is very much like the Mexican *S. dilacerata* Gorham, but the genitalia do not agree. It is probable that they are members of a more extensive complex of Neotropical species. A third one, from Colombia, is in the collection of the California Academy of Sciences.

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Figures 1P–30P. Pronota of *Silis* species.

Figure 1P. *Silis* (*Ditemnus*) *bidentata* Say.
Figure 2P. *Silis* (*Ditemnus*) *latiloba* Blatchley.
Figure 3P. *Silis* (*Ditemnus*) *freemani* Brown.
Figure 4P. *Silis* (*Ditemnus*) *fossiger* LeConte.
Figure 5P. *Silis* (*Ditemnus*) *tricornis* Van Dyke.
Figure 6P. *Silis* (*Ditemnus*) *obtusa* LeConte.
Figure 7P. *Silis* (*Ditemnus*) *howdeni* Green.
Figure 8P. *Silis* (*Ditemnus*) *vandykei* Green.
Figure 9P. *Silis* (*Ditemnus*) *nigerrima* Schaeffer.
Figure 10P. *Silis* (*Ditemnus*) *perforata* LeConte.
Figure 11P. *Silis* (*Ditemnus*) *knulli* Green.
Figure 12P. *Silis* (*Ditemnus*) *abdominalis* Schaeffer.
Figure 13P. *Silis* (*Silis*) *spinigera* LeConte.
Figure 14P. *Silis* (*Silis*) *rugosa* Van Dyke.
Figure 15P. *Silis* (*Silis*) *percomis* Say.
Figure 16P. *Silis* (*Silis*) *spathulata* LeConte.
Figure 17P. *Silis* (*Silis*) *lutea* group.
Figure 18P. *Silis* (*Silis*) *filicornis* Van Dyke.
Figure 19P. *Silis* (*Silis*) *filicornis* variation.
Figure 20P. *Silis* (*Silis*) *tardella* Green.
Figure 21P. *Silis* (*Silis*) *difficilis* group.
Figure 22P. *Silis* (*Silis*) *atra* LeConte.
Figure 23P. *Silis* (*Silis*) *deserticola* group.
Figure 24P. *Silis* (*Silis*) *emarginata* Green.
Figure 25P. *Silis* (*Silis*) *cava* complex.
Figure 26P. *Silis* (*Silis*) *arizonica* Van Dyke.
Figure 27P. *Silis* (*Silis*) *fenestrata* Van Dyke.
Figure 28P. *Silis* (*Silis*) *recta* Green.
Figure 29P. *Silis* (*Silis*) *vulnerata* group.
Figure 30P. *Silis* (*Silis*) *pallida* group.

(5) **Silis (Ditemnus) tricornis** Van Dyke.

Silis tricornis Van Dyke, 1918, Jour. New York Ent. Soc., vol. 26, p. 177.

Antennae and palpi black. Head black posteriorly, pale in front. Pronotum entirely pale, or with median black area. Scutellum and elytra black. Underside black, prothorax pale. Legs black, trochanters pale.

Length-width ratio about 2.3 : 1. Antennae rather stout, filiform, about three-fourths as long as body, intermediate segments about two and one-third times as long as wide, vestiture short and decumbent. Pronotum as in figure 5P, disk with broad median fossa. Anterior claw of front tarsi with blunt exterior basal appendix, all other claws simple. Tarsi stout, fourth segment of front tarsi larger than usual, subquadrate. Length 4.5 mm.

Distribution. CALIFORNIA: *Calipatria; Thousand Palms.* ARIZONA: *Bill Williams Fork; Globe.*

(6) **Silis (Ditemnus) obtusa** LeConte.

Silis obtusa LeConte, 1874, Trans. Amer. Ent. Soc., vol. 5, p. 62.

Body black, pronotum pale rufous with all borders narrowly black, apical margins of ventral segments pale.

Length-width ratio about 2.4 : 1. Antennae stout, subserrate, about seven-tenths as long as body, intermediate segments about twice as long as wide, vestiture short and decumbent. Pronotum as in figure 6P, with broad median fossa. Anterior claw of front tarsi with small blunt exterior basal appendix, all other claws simple. Tarsi stout, fourth segment of front tarsi larger than usual, subquadrate. Length 4.5–5 mm.

Distribution. CALIFORNIA: *Bakersfield; Camp Baldy* (San Bernardino Mountains); *Indian Canyon, San Diego County; Inyo County; Keeler; Lake Henshaw, San Diego County; Mojave Desert; Oil City, Kern County; Olanche, Los Angeles County; Oro Grande; Pasadena; Riverside; Saboda Springs, Riverside County; Victorville; Warners; Waterman Canyon.*

(7) **Silis (Ditemnus) howdeni** Green, new species.

Holotype, male; Southwestern Research Station, Portal, Arizona, VI-17-56, H. and A. Howden. In Canadian National Collection.

Body and appendages entirely black.

Length-width ratio about 3.0 : 1. Antennae moderately slender, filiform, about seven-tenths as long as body, intermediate segments about two and one-half times as long as wide, vestiture erect and bristling. Pronotum as in figure 7P, base arcuate each side, region of hind angles not excised, disk with shallow undefined median impression extending from base nearly half way to apex. Anterior claw of front tarsi with blunt exterior basal appendix,

posterior claw simple; middle and hind tarsi similar to front, with basal appendix progressively smaller. Length 4.5 mm.

Variations. Nothing of importance noted. Length 3.5–4.5 mm.

Distribution. ARIZONA: *Chiricahua Mountains, Southwestern Research Station, Portal,* H. and A. Howden, VI-17-56, holotype (CNC); VII-7-56, 1 paratype (CAS). *Cochise County, Southwestern Research Station,* 5 mi. W. of *Portal,* 5,400 ft., V-19-56, M. Statham, 1 paratype; V-31-56, E. Ordway, 1 paratype (AMNH).

This species, lacking the excision of the hind angles of the pronotum, and apparently without a definite posterior process, probably requires a new genus for its reception. It is assigned here tentatively, pending clarification of the confused generic conceptions involving *Silis, Ditemnus, Polemius,* and *Discodon.*

(8) **Silis (Ditemnus) vandykei** Green, new species.

Holotype, male; Jeff Davis County, Texas, VII-4-53, D. J. and J. N. Knull. In collection of Ohio State University.

Antennae and palpi black. Head black, mandibles and adjacent area dusky rufous; beneath pale rufous, black each side of gula. Pronotum and scutellum pale rufous. Elytra black. Ventral surface of meso- and meta-thorax black; abdomen dusky, lateral and apical borders of segments irregularly pale. Legs black.

Length-width ratio about 2.6 : 1. Antennae slender, filiform, about three-fourths as long as body, intermediate segments about three times as long as wide, vestiture erect and bristling. Pronotum as in figure 8P, base arcuate each side obliterating hind angles, disk without distinct median impression. Anterior claw of front and middle tarsi finely cleft, parts of divided tip parallel and subequal in length; anterior claw of hind tarsi more widely cleft, tooth much shorter than apical part; all teeth exterior. Posterior claw of all tarsi simple. Length 4.5 mm.

Variations. In one example the head in front of the antennal sockets is entirely pale rufous. Length 3.5–5 mm.

Distribution. TEXAS: *Jeff Davis County,* VI-20-52, D. J. and J. N. Knull, 3 paratypes (OSU 2, CAS 1); VII-4-53, D. J. and J. N. Knull, holotype, female (OSU). *Davis Mountains,* VI-24-56, VI-14-56, D. J. and J. N. Knull, 2 paratypes (OSU). *Ft. Davis,* VI-1-59, Howden and Becker, 2 paratypes (CNC). *Davis Mountains,* IX-3-49, Werner-Nutting, 1 paratype (Fender). *Chisos Basin, Big Bend,* VII-16-56, H. and A. Howden, 1 female (Howden). *Big Bend National Park, Chisos Basin: Boat Springs,* 7,000 ft.; *Pine Canyon,* 5,000 ft.; and *Green Gulch,* 5,300 ft., V-4-59 to V-29-59, Howden and Becker, 20 paratypes, 4 females (CNC), 2 paratypes (CAS). *Chisos Mountains,* VII-18, J. W. Green, 1 paratype, 4 females (CAS);

VI-20, 21-61, VII-28-62, D. J. and J. N. Knull, 5 paratypes, 5 females (OSU), 1 paratype (CAS).

(9) **Silis (Ditemnus) nigerrima** Schaeffer.

Silis nigerrima Schaeffer, 1908, Jour. New York Ent. Soc., vol. 16, p. 66.

Body entirely black except mandibles pale.

Length-width ratio about 2.8 : 1. Antennae slender, as long as body, intermediate segments about four times as long as wide, vestiture erect and bristling. Pronotum as in figure 9P. Anterior claw of front and middle tarsi with blunt exterior basal appendix, anterior claw of hind tarsi with appendix much reduced; posterior claws of all tarsi simple. Length 6–6.5 mm. Closely resembling the Mexican *S. armitagei* Pic.

Distribution. ARIZONA: *Chiricahua Mountains: Pinery Canyon; Onion Saddle; Rustlers Park. Huachuca Mountains: Carr Canyon; Ramsey Canyon; Miller Canyon. Santa Rita Mountains: Madera Canyon. Santa Catalina Mountains: Bear Wallow; Summerhaven, Pine County. White Mountains.*

(10) **Silis (Ditemnus) perforata** LeConte.

Silis perforata LeConte, 1881, Trans. Amer. Ent. Soc., vol. 9, p. 57.

Antennae and palpi black. Head black posteriorly, pale in front. Pronotum and scutellum pale rufous. Elytra black. Underside black except prothorax and abdomen rufous, varying with abdomen dark medially. Legs black, front coxae pale.

Length-width ratio about 3.3 : 1. Antennae slender, filiform, about three-fourths as long as body, intermediate segments about four times as long as wide, vestiture erect and bristling. Pronotum as in figure 10P, backward extension of anterior process overlapping posterior process, hind angles distinct. Anterior claw of front tarsi with blunt exterior basal appendix, posterior claw simple; middle and hind tarsi similar to front, with basal appendix progressively smaller. Length 5–6.5 mm.

Distribution. TEXAS: *Davis Mountains; Cypress Mills; Big Bend National Park, Chisos Basin; Kerrville; Austin; Gillespie County; Comal County; Randall County, Palo Duro Canyon; Bexar County, Fort Sam Houston,* and *Salada Creek; Real County,* 26 mi. N. of *Leakey; Rock Springs.*

(11) **Silis (Ditemnus) knulli** Green, new species.

Holotype, male; Lake Corpus Christi, Texas, III-26-53, D. J. and J. N. Knull. In collection of Ohio State University.

Antennae and palpi black. Head black posteriorly, pale in front. Pronotum and scutellum rufous. Elytra black. Underside of metathorax and tip of abdomen black, balance of ventral surface pale rufous. Legs black, front and middle coxae pale.

Length-width ratio about 2.3 : 1. Antennae slender, filiform, about three-fourths as long as body, intermediate segments about three times as long as wide, vestiture short and decumbent. Pronotum as in figure 11P, similar to *S. perforata,* backward extension of anterior process shorter, scarcely overlapping posterior process; hind angles distinct. Anterior claw of front and middle tarsi finely cleft, parts of divided tip parallel, subequal in length; anterior claw of hind tarsi more widely cleft, tooth much shorter than apical part; all teeth exterior. Posterior claw of all tarsi simple. Length 4 mm. Closely resembles *S. perforata.*

Variations. Nothing of importance noted. Length 3.5–5 mm.

Distribution. TEXAS: *Corpus Christi* and *Lake Corpus Christi,* III-17 to III-30, 1952 and 1954, D. J. and J. N. Knull, holotype, 39 paratypes (OSU 30, MCZ 1, CAS 8), 24 females (OSU 20, CAS 4). *Cameron County,* III-24-60, D. J. and J. N. Knull, 6 paratypes, 3 females (OSU).

(12) **Silis (Ditemnus) abdominalis** Schaeffer.

Silis abdominalis Schaeffer, 1908, Jour. New York Ent. Soc., vol. 16, p. 66.

Antennae black, first segment largely pale; tips of palpi black. Pronotum and scutellum rufous. Elytra black. Underside rufous, metathorax black, abdomen variably dusky baso-medially. Legs rufous, tibiae in part black.

Length-width ratio about 2.7 : 1. Antennae moderately slender, filiform, about seven-tenths as long as body, intermediate segments nearly three times as long as wide, vestiture short and decumbent. Pronotum as in figure 12P. Anterior claw of front tarsi with blunt exterior basal appendix, posterior claw simple; other tarsi similar to front, with basal appendix progressively smaller. Length 4–5 mm.

Distribution. ARIZONA: *Huachuca Mountains; Chiricahua Mountains, Southwestern Research Station,* 5 mi. W. of *Portal; Santa Rita Mountains, Madera Canyon.*

Subgenus **Silis**

The genus *Silis* was proposed by Charpentier (1825) with *S. spinicollis* Charpentier, a synonym of *S. nitidula* Fabricius, as the genotype. Specimens of *S. nitidula,* generously donated by Vladimir Vosyka of Czechoslovakia, have genitalia similar to those found in the "*vulnerata*" group, confirming the generic assignment of the Nearctic species. They also have the same smooth, shining, and glabrous hypomera.

Modification of the tarsal claws in the males is of the same type throughout, and mention of it will be omitted from the species descriptions that follow. The anterior claw of all tarsi is provided with a blunt exterior basal appendix, the posterior claw of all tarsi being simple. The antennal structure is also fairly constant: slender, subfiliform, about four-fifths as long as the body,

intermediate segments three to four times as long as wide. Length-width ratios are likewise omitted, unless they vary appreciably from the normal 2.75 : 1. The color of the mandibles is entirely or largely pale in all species, and the apical margins of the ventral segments are more or less distinctly pale. The most essential descriptive items are the genitalic and pronotal drawings, and these alone should be sufficient for species identification. It is not to be expected that every specimen is identifiable. Variability is often baffling, and unrecognized species are probably still numerous.

In the females the hypomera, unlike the males, are flat or convex, and usually punctate and pubescent. The females of those species with bicolored pronota have the black areas much reduced, and occasionally absent altogether.

Key to Nearctic Species of the Subgenus *Silis*, Males

1. Prothorax small, narrower than elytra at base. Posterior process of pronotal armature broad, bidentate, anterior tooth long and acute ..... (1) *S.* (*S.*) *spinigera* LeConte
   Prothorax normal, as wide as elytra at base. Posterior process not bidentate 2
2. Antennal vestiture erect and bristling 3
   Antennal vestiture decumbent 5
3. California species. Aedeagus with laterophyses ..... (2) *S.* (*S.*) *rugosa* Van Dyke
   Eastern or midwestern species. Aedeagus without laterophyses 4
4. Acute lateral margin of pronotum attaining tip of anterior process ..... (3) *S.* (*S.*) *percomis* Say
   Acute lateral margin of pronotum not attaining tip of anterior process ..... (4) *S.* (*S.*) *spathulata* LeConte
5. Posterior process of pronotum, viewed ventrally, rapidly narrowing and terminating in a setiform spine directed anteriorly 6
   Posterior process not as above, of substantial width throughout 7
6. Posterior process abruptly curving forward, attaining tip of anterior process. Excision at hind angles large and open (*S.* (*S.*) *lutea* Group) 12
   Posterior process terminating in a small seta-like spine not attaining tip of anterior process. Excision at hind angles more or less completely closed by dorsal surface of extended hypomeron. Southern California ..... (8) *S.* (*S.*) *filicornis* Van Dyke
7. Posterior process combining with laterally produced hind angle of pronotum to form a bidentate structure in dorsal view. Basophyses united, forming a broad deeply emarginate plate ..... (9) *S.* (*S.*) *tardella* Green, new species
   Not as above 8
8. Posterior process nearly straight, subspiniform, directed outward and slightly backward 9
   Not as above 10
9. Pronotum pale with dark borders which are rarely lacking. Aedeagus without laterophyses (*S.* (*S.*) *difficilis* Group) 14
   Pronotum unicolorous, fulvous or black. Aedeagus with laterophyses (*S.* (*S.*) *deserticola* Group) 22
10. Posterior process simple, narrow, directed outward. Tips of anterior and posterior processes widely separated 11
    Posterior process complex, broad (*S.* (*S.*) *cava* Group) 29
11. Posterior process curving slightly forward (*S.* (*S.*) *vulnerata* Group) 47
    Posterior process bending abruptly forward distally (*S.* (*S.*) *pallida* Group) 67

In the following part of the key, all characters, except where otherwise stated, refer to the male genitalia.

S. (S.) LUTEA GROUP

12. Dorsal plate with small median emargination not entering membraneous area. Figure 5 ..... (5) *S.* (*S.*) *carmelita* Green, new species
Dorsal plate with wide and deep emargination entering membraneous area 13
13. Basophyses moderately bent inward submedially, exposed tips straight in lateral view. Emargination of dorsal plate narrower, deeper than wide. Pronotum with median dark area when elytra are black. Figure 6 ..... (6) *S.* (*S.*) *lutea* LeConte
Basophyses strongly bent inward submedially, exposed tips slightly recurving or hooked in lateral view. Emargination of dorsal plate with depth and width subequal. Pronotum entirely pale, elytra black. Figure 7 ..... (7) *S.* (*S.*) *filigera* LeConte

S. (S.) DIFFICILIS GROUP

In some of the species of this group, the upper margins of the lateral incisures of the tegmen, viewed ventrally, are more or less prominently angulate at about the distal third, the angulation sometimes convex and subcarinate, varying to a simple flat extension of the surface. When the angulation is fully developed, the margin of the incisure deflects around the tip of the angle, which is actually a small oblique lamina appearing acute from a direct ventral viewpoint. Nearly all of the *S. difficilis* group species with this modification are Californian, the only known exception being *S. nevadica*. The emargination of the dorsal plate follows a general plan for each species, as shown in the drawings, but it is usually quite variable. There are no laterophyses. The antennal vestiture is short and decumbent.

14. Emargination of dorsal plate narrowing to apex, basophyses emerging close together and subparallel. In lateral view, tips of basophyses recurving or enlarged on proximal side. Elytra flavate 15
15. In ventral view, upper margins of lateral incisure of tegmen subangulate at about distal third. Emargination of dorsal plate usually with sides sinuate distally. Figure 10 ..... (10) *S.* (*S.*) *flavida* LeConte
In ventral view, upper margins of lateral incisure of tegmen not subangulate at distal third. Emargination of dorsal plate usually with sides straight, not, or very feebly, sinuate distally. Figure 11 ..... (11) *S.* (*S.*) *lasseni* Green, new species
16. In ventral view, upper margins of lateral incisure of tegmen subangulate at about distal third 17
In ventral view, upper margins of lateral incisure of tegmen not subangulate at distal third 19
17. In lateral view, tips of basophyses recurved or prominently enlarged on proximal side. Figure 12 ..... (12) *S.* (*S.*) *nevadica* Green, new species
In lateral view, tips of basophyses not recurved or prominently enlarged on proximal side 18
18. Exposed tips of basophyses very slender. In dorso-ventral view, median lobe of aedeagus broad, not narrowing distally, sides not striate. Ventral lobe of tegmen wider, with distinct apical notch. Figure 13 ..... (13) *S.* (*S.*) *tenuata* Green, new species
Exposed tips of basophyses normally wide. In dorso-ventral view, median lobe of aedeagus narrowing to apex, sides striate. Ventral lobe of tegmen narrower, without, or with minute, apical notch. Figure 14 ..... (14) *S.* (*S.*) *carbo* Van Dyke
19. In dorso-ventral view, median lobe of aedeagus broad, with small apical notch, sides not striate. Figure 15 ..... (15) *S.* (*S.*) *oregonensis* Green, new species

In dorso-ventral view, median lobe of aedeagus elongate, narrowing to apex, sides in part sclerotized and with irregular longitudinal striation 20

20. Emargination of dorsal plate less broadly U-shaped, deeper than wide, sides subparallel or feebly diverging, usually not curving inward distally. Emargination not attaining membraneous area by a conspicuous distance. Figure 16 ..... (16) *S.* (*S.*) *striatella* Green, new species

Emargination of dorsal plate broadly U- or V-shaped, about as deep as wide, sides curving inward distally 21

21. Elytra in part usually more or less flavate, this not apparent in darker individuals unless examined under brilliant illumination. Basophyses typically extending very little beyond emargination of dorsal plate, narrowing apically as seen in lateral view. Emargination of dorsal plate usually not attaining membraneous area by a conspicuous distance. Figure 17 ..... (17) *S.* (*S.*) *difficilis* LeConte

Elytra usually uniformly deep black. Basophyses typically extending conspicuously beyond emargination of dorsal plate, somewhat expanded apically as seen in lateral view. Emargination of dorsal plate usually attaining membraneous area. Figure 17a ..... (17a) *S.* (*S.*) *difficilis occidens* Green, new subspecies

S. (*S.*) *DESERTICOLA* GROUP

In this group the laterophyses are provided with a coriaceous and sparsely setiferous distal appendix. The appendix may be small and inconspicuous, or it may involve the entire tip of the laterophysis. In the latter case, the actual tip of the laterphysial rod is recognized by being strongly sclerotized and glabrous. This structure is also found in the *S. vulnerata* group and in the Palearctic genotype, *S. nitidula* Fabricius. The basophyses are united basally and furcate at about the middle of their length. A unique feature of this group, *S. atra* excepted, is the trilobed dorsal plate, with the lobes on each side at a level below that of the median part. This complicates the genitalic drawings, but it may be clarified to some extent by the posterior view diagrams of the tegmen. All of the *Silis* species with appendiculate laterophyses are apparently well established and not involved in current evolutionary development. The species allied to *S. deserticola*, having fulvous pronota, are rare in collections. Only eight males, representing seven species, are known at present. They are identical externally, differing radically in the male genitalia. All occur in southern California. The antennal vestiture is short and decumbent.

22. Dorsal plate simple, with deep and very wide emargination. Body entirely black above. Figure 18 ..... (18) *S.* (*S.*) *atra* LeConte

Dorsal plate trilobed. Body black, pronotum fulvous 23

23. Ventral lobe of tegmen extending well beyond dorsal plate. Posterior orifice of tegmen not constricted below dorsal plate. Figure 19 ..... (19) *S.* (*S.*) *egregia* Green, new species

Ventral lobe of tegmen not extending beyond dorsal plate. Posterior orifice of tegmen constricted below dorsal plate 24

24. Laterophyses with tips squarely truncate 25

Laterophyses with tips not squarely truncate, more or less acute 26

25. Median part of dorsal plate feebly lobed, lobes on each side extending far beyond it. Figure 20 ..... (20) *S.* (*S.*) *singularis* Green, new species

Median part of dorsal plate not lobed, with shallow and broadly angulate emargination. Figure 21 ..... (21) *S.* (*S.*) *eximia* Green, new species

26. Median part of dorsal plate deeply triangularly emarginate. Figure 22 ..... (22) *S.* (*S.*) *abstrusa* Green, new species

Median part of dorsal plate not emarginate 27

27. Median part of dorsal plate with prominent lobe about half as long as wide. Figure 23 ..... (23) *S.* (*S.*) *arida* Green, new species
Median part of dorsal plate subtruncate 28
28. Lobes each side extending well beyond median part of dorsal plate. Median lobe of aedeagus with apical process. Figure 24 ..... (24) *S.* (*S.*) *ursina* Green, new species
Lobes each side extending only slightly beyond median part of dorsal plate. Median lobe of aedeagus without apical process ..... (25) *S.* (*S.*) *deserticola* Van Dyke

S. (*S.*) *CAVA* GROUP

29. Genitalia with single basophysis, which may be furcate or not 30
Genitalia with two basophyses *S.* (*S.*) *emarginata* Section 31
30. Basophysis furcate at about middle of length *S.* (*S.*)*cava* Section 39
Basophysis not furcate, tip notched *S.* (*S.*) *californica* Section 40

S. (*S.*) *EMARGINATA* SECTION

31. Dorsal plate not emarginate, posterior margin convex. Figure 26 ..... (26) *S.* (*S.*) *incongrua* Green, new species
Dorsal plate emarginate; or subtruncate in dorsal view, emarginate in posterior view 32
32. Laterophyses with prominent exterior distal tooth. Figure 27 ..... (27) *S.* (*S.*) *angulata* Green, new species
Laterophyses without tooth 33
33. Laterophyses with tips somewhat widened and everted in dorso-ventral view 34
Laterophyses slender distally, tips straight or feebly diverging 36
34. Basophyses extending posteriorly as far as, or beyond, apex of deep emargination of dorsal plate. Elytra flavate, tips sometimes dark. Legs largely pale. Figure 28 ..... (28) *S.* (*S.*) *emarginata* Green, new species
Basophyses not extending posteriorly as far as apex of shallower emargination of dorsal plate. Elytra flavate with sutural bead and apex dark. Legs largely dark 35
35. Dorsal plate with rather deep subtriangular emargination usually attaining membraneous area. Tips of laterophyses everted for a considerable distance. Figure 29 ..... (29) *S.* (*S.*) *fenderi* Green, new species
Dorsal plate with shallow arcuate emargination not attaining membraneous area by a conspicuous distance. Everted tips of laterophyses very short. Figure 30 ..... (30) *S.* (*S.*) *subtruncata* Green, new species
36. In lateral view, median lobe of aedeagus not subtriangular, upper margin broadly arcuate or nearly straight 37
In lateral view, median lobe of aedeagus elongate subtriangular, widest at about distal third, where upper margin is subangulate 38
37. Lobes of dorsal plate emargination not, or only feebly, deflected: in direct posterior view, emargination completely flattened or very broadly V-shaped. Laterophyses moderately slender ..... (31) *S.* (*S.*) *macclayi* Green, new species
Lobes of dorsal plate emargination strongly deflected, forming a deep U-shaped emargination in direct posterior view. Laterophyses distinctly broader as compared to preceding species. Figure 32 ..... (32) *S.* (*S.*) *crucialis* Green, new species
38. Laterophyses broad except apically. Figure 33 ..... (33) *S.* (*S.*) *thermalis* Green, new species
Laterophyses rather slender throughout. Figure 34 ..... (34) *S.* (*S.*) *acuta* Green, new species

S. (*S.*) *CAVA* SECTION

39. Genitalia as in figure 35 ..... (35) *S.* (*S.*) *cava* LeConte
Genitalia similar but differing in some respects ..... *S.* (*S.*) *cava* complex

S. (S.) californica Section

40. Dorsal plate not emarginate. Pronotum entirely pale fulvous. Figure 36 ..... (36) *S. (S.) arizonica* Van Dyke
Dorsal plate emarginate, emargination sometimes lacking in *S. (S.) fenestrata*, in which the pronotal borders are black 41
41. Dorsal plate with small variable emargination, rarely lacking. Pronotum pale fulvous with black borders; anterior process with narrow extension deflected below acute angle of posterior process, completely closing marginal incisure in direct dorsal view. Figure 37 ..... (37) *S. (S.) fenestrata* Van Dyke
Dorsal plate with normal, usually deep, emargination. Pronotum entirely pale fulvous or flavate; with distinct marginal incisure 42
42. Elytra dark, partly fusco-flavate under brilliant illumination 43
Elytra pale flavate 44
43. Laterophyses shorter, stout except apically, curving downward distally. Basophysis expanded apically. Figure 38 ..... (38) *S. (S.) californica* Fender
Laterophyses longer, slender throughout, curving upward distally. Basophysis not expanded apically. Figure 39 ..... (39) *S. (S.) reversa* Green, new species
44. Laterophyses broad, tips bent strongly inward and downward. Emargination of dorsal plate wide, moderately deep, apex subtruncate. Figure 40 ..... (40) *S. (S.) solitaria* Green, new species
In dorso-ventral view, tips of laterophyses subparallel or diverging 45
45. Laterophyses slender throughout, tips not diverging. Figure 41 ..... (41) *S. (S.) recta* Green, new species
Laterophyses broad except apically, tips diverging 46
46. In dorso-ventral view, laterophyses curving inward at about distal fourth, lyre-shaped. Figure 42 ..... (42) *S. (S.) angelica* Green, new species
In dorso-ventral view, laterophyses subparallel. Figure 43 ..... (43) *S. (S.) latestyla* Green, new species

S. (S.) vulnerata Group

47. With single basophysis, bilaterally enlarged at apex. Laterophyses slender, lyre-shaped, without distal appendix. Pronotum without distinct median dark area. Figure 44 ..... (44) *S. (S.) fabulosa* Green, new species
With two basophyses 48
48. Posterior margin of dorsal plate not inflexed or thickened, with at most only a minute denticulation each side 49
Posterior margin of dorsal plate inflexed or thickened 50
49. Basophyses widely divaricate, tips broadly visible each side of ventral lobe in direct ventral view. Figure 45 ..... (45) *S. (S.) divaricata* Green, new species
Basophyses subparallel, tips not visible each side of ventral lobe in direct ventral view ..... (46) *S. (S.) montanica* Green, new species
50. Posterior margin of dorsal plate not bidentate, a short inflexed median lobe separating tips of basophyses. Laterophyses apparently without distal appendix. Figure 47 ..... (47) *S. (S.) lecontei* Green, new species
Posterior margin of dorsal plate more or less strongly bidentate, teeth inflexed, acute or obtuse 51
51. Marginal teeth of dorsal plate very large and prominent, plainly visible from direct lateral viewpoint. Basophyses not extending to dorsal plate, their tips separated therefrom by a considerable distance 52

Marginal teeth of dorsal plate of normal size, not plainly visible from direct lateral viewpoint 53

52. Basophyses long, slender in more than distal half, curving outward and upward. Marginal teeth of dorsal plate extremely large, much retracted. Pronotum with black borders, disk entirely fulvous. Figure 48 ..... (48) *S.* (*S.*) *dentigera* Green, new species
Basophyses short and stout. Marginal teeth of dorsal plate smaller. Pronotum largely black. Figure 49 ..... (49) *S.* (*S.*) *disjuncta* Green, new species

53. Basophyses long, extending for a considerable distance beyond posterior margin of dorsal plate 54
Basophyses of normal length, at most with tips curving over posterior margin of dorsal plate, but not extending beyond for any appreciable distance 58

54. Appendix of laterophyses small and inconspicuous, sometimes not apparent 55
Appendix of laterophyses larger, conspicuous, not lineate 56

55. In ventral view, tips of basophyses curving slightly inward. Laterophyses feebly sinuate in lateral view, curving downward distally; parallel and straight in dorsal view. Figure 50 ..... (50) *S.* (*S.*) *triplicata* Green, new species
In ventral view, tips of basophyses curving strongly inward. Laterophyses nearly straight in lateral view, curving inward distally in dorsal view. Figure 51 ..... (51) *S.* (*S.*) *protracta* Green, new species

56. Appendix larger than contiguous portion of laterophysis, which it may envelop and obscure 59
Appendix not as above 57

57. In lateral view, laterophyses slender throughout. Figure 51a ..... Unidentified, near *S. protracta*
In lateral view, laterophyses much expanded on dorsal side. Figure 52 ..... (52) *S.* (*S.*) *simulata* Green, new species

58. In lateral view, appendix large and prominent, nearly as large as, to larger than, contiguous portion of laterophysis 59
In lateral view, appendix small and inconspicuous, sometimes not apparent. Pronotum with median vitta 65

59. In lateral view, appendix foliate, considerably broader and extending far beyond slender tip of laterophysis 60
In lateral view, appendix extending little or not at all beyond tip of laterophysis 62

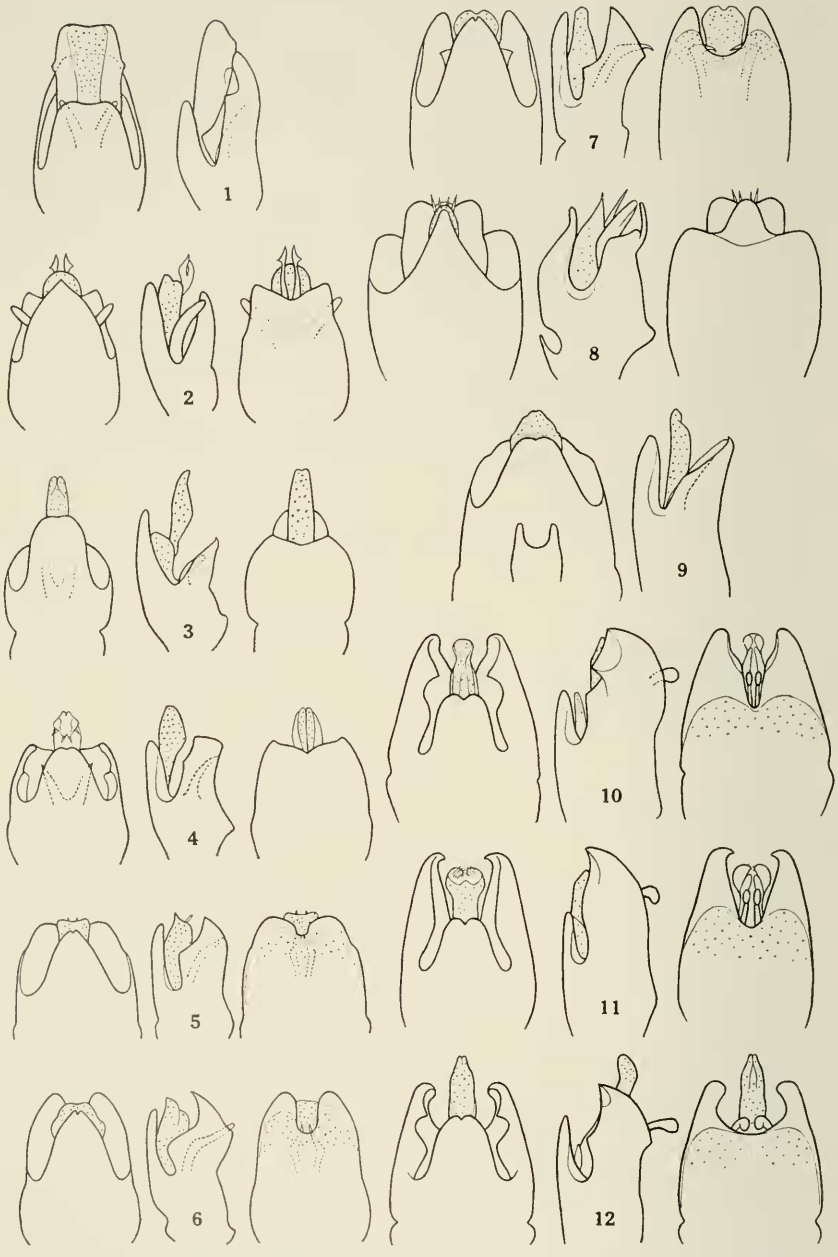
60. In ventral view, basophyses straight, divergent, tips visible each side of ventral lobe 61
In ventral view, basophyses diverging, abruptly converging from about distal fourth; tips not visible each side of ventral lobe. Figure 53 ..... (53) *S.* (*S.*) *introversa* Green, new species

61. In dorsal view, diverging tips of laterophyses short, abruptly everted. Figure 54 ..... (54) *S.* (*S.*) *perfoliata* Green, new species
In dorsal view, diverging tips of laterophyses longer, regularly arcuate. Figure 55 ..... (55) *S.* (*S.*) *proxima* Green, new species

62. In ventral view, basophyses divergent, straight, tips visible each side of ventral lobe 63
In ventral view, basophyses feebly arcuate, subparallel distally, tips not visible each side of ventral lobe 64

63. Disk of pronotum without median vitta. Figure 56 ..... (56) *S.* (*S.*) *abrupta* Green, new species
Disk of pronotum with median vitta. Figure 57 ..... (57) *S.* (*S.*) *lobata* Green, new species

64. In lateral view, laterophysis asymmetric, somewhat L-shaped, its lower margin bending rather abruptly upward at about distal third, forming an obtuse angle; its upper margin concavely arcuate. In lateral view, basophyses with lower margin uniformly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arcuate. Figure 58 ..... (58) *S.* (*S.*) *vulnerata* LeConte
In lateral view, laterophyses not as above, nearly symmetrical. In lateral view, basophyses with lower margin usually subangulate. Figure 59 ..... (59) *S.* (*S.*) *parallela* Green, new species

65. In lateral view, basophyses very stout, constricted near tip. Figure 60 ..... (60) *S.* (*S.*) *constricta* Green, new species
Basophyses not as above 66

66. In lateral view, laterophyses abruptly bending downward at about middle of length; appendix setiform. Figure 61 ..... (61) *S.* (*S.*) *barri* Green, new species
In lateral view, laterophyses curving feebly downward near tip; appendix not apparent. Figure 62 ..... (62) *S.* (*S.*) *insolita* Green, new species

S. (*S.*) *PALLIDA* GROUP

67. Median lobe of aedeagus narrowly subtriangular in dorso-ventral view, slender apically. Ventral lobe of tegmen subtriangular, apex more or less acute 68
Median lobe of aedeagus broad in dorso-ventral view, sometimes narrowing toward apex 69

68. Basophyses shorter, not attaining posterior margin of dorsal plate. Figure 63 ..... (63) *S.* (*S.*) *pallida* Mannerheim
Basophyses attaining posterior margin of dorsal plate. Figure 64 ..... (64) *S.* (*S.*) *insperata* Green, new species

69. Elytra black. Laterophyses curving downward at about distal third or fourth. Figure 65 ..... (65) *S.* (*S.*) *maritima* Van Dyke
Elytra flavate, sides and apices dark. Laterophyses various ..... Unidentified complex

(1) **Silis (Silis) spinigera** LeConte.

Silis spinigera LECONTE, 1874, Trans. Amer. Ent. Soc., vol. 5, p. 61.
Silis munita LECONTE, 1881, Trans. Amer. Ent. Soc., vol. 9, p. 56.

Black; prothorax flavate, elytra flavate with apices more or less broadly dusky, legs partly pale. Varies with elytra and legs entirely black.

←

FIGURES 1–12. Male genitalia; ventral, lateral, and dorsal views, arranged in that order from left to right.

FIGURE 1. *Silis* (*Silis*) *spinigera* LeConte, dorsal view omitted.
FIGURE 2. *Silis* (*Silis*) *rugosa* Van Dyke.
FIGURE 3. *Silis* (*Silis*) *percomis* Say.
FIGURE 4. *Silis* (*Silis*) *spathulata* LeConte.
FIGURE 5. *Silis* (*Silis*) *carmelita* Green, holotype.
FIGURE 6. *Silis* (*Silis*) *lutea* LeConte.
FIGURE 7. *Silis* (*Silis*) *filigera* LeConte.
FIGURE 8. *Silis* (*Silis*) *filicornis* Van Dyke.
FIGURE 9. *Silis* (*Silis*) *tardella* Green, holotype, dorsal view omitted, basophysial plate inserted.
FIGURE 10. *Silis* (*Silis*) *flavida* LeConte.
FIGURE 11. *Silis* (*Silis*) *lasseni* Green, holotype.
FIGURE 12. *Silis* (*Silis*) *nevadica* Green, holotype.

Form elongate, length-width ratio about 3.2 : 1. Antennal vestiture short and decumbent. Pronotum as in figure 13P, small, narrower than elytra at base. Genitalia as in figure 1, no laterophyses; median lobe large and stout, as wide as ventral lobe of tegmen. Length 7–8.5 mm.

Distribution. CALIFORNIA, OREGON, BRITISH COLUMBIA, IDAHO, UTAH, WYOMING, COLORADO.

This species, occurring over a wide range, is remarkably constant in structure, regardless of color. It probably should be removed from *Silis* to a new monobasic genus because of its radically different genitalia and facies.

(2) **Silis (Silis) rugosa** Van Dyke.

Silis rugosa Van Dyke, 1918, Jour. New York Ent. Soc., vol. 26, p. 169.

Body and appendages deep black; pronotum fulvous with all borders black, the lateral borders narrowly. Underside black except prothorax fulvous with lateral borders black.

Antennal vestiture erect and bristling. Pronotum as in figure 14P. Genitalia as in figure 2, basophyses widely divergent, surpassing sides of tegmen. Laterophyses each with acute external tooth distally. Dorsal plate shallowly emarginate throughout its width. Ventral lobe with apex acute. Length 4–5 mm.

Distribution. CALIFORNIA: *Marin County: Mt. Tamalpais, Mill Valley; Lake County: Anderson Springs; Napa County: Oakville; Santa Cruz; Alameda County; Mendocino County: Ryan Creek, Fort Bragg.*

All dates of capture are for February and March, except for a Fort Bragg specimen taken in December.

(3) **Silis (Silis) percomis** Say.

Cantharis percomis Say, 1835, Boston Jour. Nat. Hist., vol. 1, p. 159.
Podabrus curtus LeConte, 1850, *In:* Lake Superior, by Louis Agassiz, p. 229 (female).
Silis longicornis LeConte, *In:* Lake Superior, by Louis Agassiz, p. 230 (male).

Black; pronotum pale rufous with anterior explanate border, and basal border medially, more or less blackish.

Antennal vestiture erect and bristling. Pronotum as in figure 15P, acute lateral margin continuing from apex to tip of anterior process. Genitalia as in figure 3, no laterophyses, ventral lobe of tegmen extending posteriorly beyond dorsal plate. Length 5–6 mm.

Distribution. NEW BRUNSWICK, NOVA SCOTIA, ONTARIO, QUEBEC, MAINE, NEW HAMPSHIRE, MASSACHUSETTS, CONNECTICUT, NEW YORK, PENNSYLVANIA, NEW JERSEY, MARYLAND, VIRGINIA, KENTUCKY, TENNESSEE, NORTH CAROLINA, SOUTH CAROLINA, ALABAMA, OHIO, INDIANA, ILLINOIS, MICHIGAN, WISCONSIN, IOWA, MINNESOTA.

(4) **Silis (Silis) spathulata** LeConte.

Silis spathulata LeConte, 1881, Trans. Amer. Ent. Soc., vol. 9, p. 57.

Black, pronotum pale rufous with anterior border more or less blackish. Antennal vestiture erect and bristling. Pronotum as in figure 16P, acute lateral margin not extending to tip of anterior process. Genitalia as in figure 4, ventral lobe of tegmen not extending posteriorly beyond dorsal plate. No laterophyses. Length 5 mm.

Distribution. NEW YORK: *Ithaca;* TENNESSEE: *Knoxville;* NORTH CAROLINA: *Chapel Hills;* SOUTH CAROLINA: *Clemson.*

This species is rare in collections, most of the specimens so identified belonging to *S. percomis.* The genitalia of the two species are quite distinct, but externally the two are not so readily separated. The best character for that purpose is the acute lateral margin of the pronotum, which in *S. percomis* extends to the tip of the anterior process, while in *S. spathulata* the acute margin obsolesces at an appreciable distance before the tip.

(5) **Silis (Silis) carmelita** Green, new species.

Holotype, male; Carmel, Calif., Monterey County, IV-9-11, L. S. Slevin. In collection of California Academy of Sciences. CAS type number 9081.

Head and appendages black. Pronotum pale fulvous with entire median black vitta about one-third pronotal width, widest at base, narrowing anteriorly, expanding abruptly over anterior explanate border, margins of vitta irregular. Scutellum and elytra black. Underside, except prothorax, dark. Legs black.

Pronotum as in figure 17P. Genitalia as in figure 5, no laterophyses; emargination of dorsal plate small, not entering membraneous area. Basophyses feebly bending inward near middle of length. Length 5.5 mm.

Variations. The median pronotal vitta may be much constricted or entirely eliminated in anterior third or half. This occurs mostly in females, only one male showing a pronounced constriction. In two males the elytra are flavate with the sutural bead dark, and the lateral borders except basally, and the apex more broadly, infuscate. In one of these males the pronotum is entirely flavate, in the other it is flavate with a large medio-basal dark area. Two females also have similarly flavate elytra, but without pronotal maculation.

Distribution. CALIFORNIA: *Carmel*: holotype, 5 paratypes, 6 females. IV-9 to V-20, E. C. Van Dyke, or F. E. Blaisdell, or L. S. Slevin (CAS); 1 paratype (elytra flavate) II-22-16, Slevin (CAS); 1 female (elytra flavate) III-15-31, Slevin (CAS). *Del Monte,* 1 paratype, V-5-23, Slevin (CAS). *San Simeon,* 1 paratype, V-22-54, O. Bryant (CAS). *Soquel Creek, Santa Cruz County,* 1 paratype, 1 female (both with flavate elytra) V-30-19, Van Dyke (CAS). *Seaside, Monterey County,* 1 female, IV-11-13, Slevin (CAS).

(6) **Silis (Silis) lutea** LeConte.

Silis lutea LeConte, 1853, in Catalog-desc. Coleop. of U.S., by Melsheimer, Smithsonian Inst., p. 78.

Silis pallens LeConte, 1851, Proc. Acad. Nat. Sci. Philadelphia, vol. 5, p. 339 (preoccupied).

Head and appendages black. Pronotum pale fulvous with entire median black vitta about one-third pronotal width, widest at base, narrowing anteriorly, expanding abruptly over anterior explanate border, margins of vitta irregular; varying with partial elimination of dark area anteriorly, progressing posteriorly to pronotum entirely pale. Scutellum black. Elytra flavate with sutural bead dark, apex and lateral borders, except basally, usually somewhat infuscate. Varying with elytra entirely black, which is usually seen to be in part fusco-flavate or brunneous when examined under brilliant illumination. Pronotal vitta always present when elytra are dark.

Antennal vestiture short and decumbent. Pronotum as in figure 17P. Genitalia as in figure 6, no laterophyses; emargination of dorsal plate large, deeper than wide, entering membranous area. Basophyses feebly bending inward near middle of length. Length 4.5–6.5 mm.

Distribution. BRITISH COLUMBIA, WASHINGTON, OREGON, northern half of CALIFORNIA.

The color of the elytra is of no taxonomic importance. The dark form extends from Humboldt County, in northern California, to British Columbia where it predominates over the pale phase. Pale and dark ones occur together in the same locality. Examples of *S. lutea* with dark elytra were considered by Van Dyke to be a color phase that he identified as *S. filigera* LeConte. The latter is a valid species quite different in genitalic structure, and occupying a different geographic range.

A specimen from Mt. Madonna, Santa Cruz County, California (UCD), having the elytra black and the pronotum entirely pale, is referred here tentatively. The basophyses differ slightly in being more slender, and apparently do not bend inwardly near middle of length. This feature is somewhat variable and cannot be considered conclusive without additional material.

(7) **Silis (Silis) filigera** LeConte.

Silis filigera LeConte, 1874, Amer. Ent. Soc., Trans., vol. 5, p. 62.

Body and appendages black, pronotum entirely pale rufous.

Pronotum as in figure 17P. Genitalia as in figure 7, no laterophyses, emargination of dorsal plate very large, as deep as wide, entering membraneous area, basophyses bending strongly inward near middle of length. Length 4.5–5 mm.

Distribution. CALIFORNIA: *Pasadena*, IV, Fenyes, 1 male, 1 female (CAS). *Sierra Madre*, VI, Fenyes, 1 male (CAS).

This is definitely a valid species and not a color phase of *S. lutea*. Only two males and one female have been seen. They are constant in color pattern, agreeing with LeConte's description, but probably additional material will show the color variability characteristic of the *S. lutea group*.

(8) **Silis (Silis) filicornis** Van Dyke.

Silis filicornis Van Dyke, 1918, Jour. New York Ent. Soc., vol. 26, p. 172.

Body and appendages black, pronotum pale fulvous.

Length-width ratio about 3 : 1. Form narrow, parallel-sided. Antennae slender, filiform, about as long as body, intermediate segments about four times as long as wide, vestiture short and decumbent. Pronotum as in figure 18P, excision at hind angles more or less completely filled by *dorsal surface* of hypomeron which joins lateral margin of pronotum at tip of anterior process, and at its angular rear extremity is produced in a small extension (the posterior process) terminating in a forward-curving spiniform seta. Genitalia as in figure 8. Basophyses united to form a broad parallel-sided plate about half as wide as tegmen, shallowly emarginate distally. Laterophyses straight, spiniform. Median lobe of aedeagus with dual short spiniform processes at apex. Dorsal plate with raised median lobe extending backward, its tip meeting posterior margin of basophysial plate. Length 4–5 mm.

A specimen from Pine Valley, San Diego County (CAS), varies in having the pronotum as in figure 19P. It is referred to this species as the genitalia seem not to differ in any way.

Distribution. CALIFORNIA: *San Jacinto Mountains. Palm Springs;* same, *Andreas Canyon;* same, *Palm Canyon. White Water;* same, *Snow Creek. Thousand Palms. East Highlands. San Bernardino Mountains, Devil Canyon.* 2 mi. W. of *Jacumba. San Diego County, Pine Valley.*

(9) **Silis (Silis) tardella** Green, new species.

Holotype, male; California, no definite locality, Horn collection, H 4923, with identification label "S. filigera Lec." In collection of Academy of Natural Sciences of Philadelphia.

Head black, pale in front; antennae and palpi dark. Pronotum entirely fulvous. Scutellum and elytra black. Underside: head fulvous, dark each side of gula; prothorax fulvous; balance of ventral surface dark except apical borders of ventral segments pale. Legs and coxae dark.

Length-width ratio about 2.75 : 1. Antennae filiform, about four-fifths as long as body, intermediate segments about three and one-half times as long as wide, vestiture short and decumbent. Pronotum as in figure 20P, lateral explanate borders thin, subhyaline. Anterior claw of all tarsi with blunt exterior basal appendix, other claws simple. Genitalia as in figure 9, dorsal plate

not emarginate, no laterophyses, basophyses united in a broad deeply emarginate plate attaining posterior margin of dorsal plate. Length 5 mm.

Distribution. CALIFORNIA, no definite locality (ANSP).

This species is represented only by the holotype from the Horn collection. The possibility that it might be a mislabeled European specimen should be investigated.

(10) **Silis (Silis) flavida** LeConte.

Silis flavida LeConte, 1874, Trans. Amer. Ent. Soc., vol. 5, p. 61.

Antennae black, pale beneath basally; palpi black. Head black, pale in front. Pronotum flavate; varying with basal, apical, and sometimes lateral, borders black. Scutellum black. Elytra flavate with apices broadly, and sides except basally, black or dusky; sutural bead usually brunneous, varying to partly or entirely flavate. Underside, except prothorax, dark. Legs pale, coxae and base of femora black, metafemora largely black.

Pronotum as in figure 21P. Genitalia as in figure 10, emargination of dorsal plate narrowing to apex, its sides usually sinuate distally; basophyses emerging close together, subparallel, tips recurving or enlarged on proximal side. In ventral view, upper margins of lateral incisure of tegmen subangulate at about distal third. Length 5–6.5 mm.

Distribution. CALIFORNIA: *Nevada County: Sagehen Creek near Hobart Mills; Truckee. El Dorado County: Tahoe; Grass Lake; Echo Lake; Lake Tahoe; Fallen Leaf Lake; Mt. Tallac; Tallac; Wright's Lake; Angora Lake. Alpine County: Hope Valley; Ebbets Pass. Calaveras Big Trees. Sonora Pass; Tuolumne Meadows; Yosemite National Park; Yosemite Valley; Saylor Lake; May Lake; Strawberry; Summerdale (Fish Camp). Mono County: Tioga Crest; Sardine Creek; Sonora Pass.* NEVADA: *Lake Tahoe.*

This species is quite variable and may be complex. Material from the Yosemite region usually has the emargination of the dorsal plate V-shaped with straight sides and often with the tips turning inward. A specimen labeled "Nev." (ANSP) has the tegminal structure of *S. flavida* and the aedeagus of *S. lasseni*, and is possibly a hybrid.

(11) **Silis (Silis) lasseni** Green, new species.

Holotype, male; Duck Lake, Lassen County, California, V-8-21, J. O. Martin. In collection of California Academy of Sciences. CAS type number 9082.

Antennae black, three basal segments pale beneath; palpi dark. Head black, pale in front. Pronotum flavate with all borders narrowly black. Scutellum black. Elytra flavate, becoming darker rufo-brunneous in more than distal

half. Underside, except prothorax, dark. Legs dark, tibiae and tips of femora pale.

Pronotum as in figure 21P. Genitalia as in figure 11, emargination of dorsal plate narrowing to apex, sides not sinuate distally; basophyses emerging close together, subparallel, tips recurving or enlarged on proximal side. In ventral view, upper margins of lateral incisure of tegmen not subangulate distally. Length 5 mm.

Variations. The dark pronotal borders vary by reduction, leaving only the apical and basal narrowly dusky. The holotype, described above, was selected because of the clear visibility of the genitalic structure. Normally the elytra are more or less broadly black or dusky at apex and sides, the lateral dark area narrowing anteriorly and not reaching the base. The sutural bead is usually dark except near the scutellum.

The genitalia vary considerably. The emargination of the dorsal plate, normally V-shaped, sometimes has the sides sinuate as in *S. flavida*. Occasional examples occur in which a slight angulation is apparent at about distal third of the upper margins of the lateral incisure of the tegmen, viewed ventrally. The formation of the median lobe of the aedeagus offers the most decisive character for separating this species from *S. flavida,* but unfortunately this structure is often distorted and inconclusive. Length 5.5–6.5 mm.

Typical specimens of *S. lasseni*, from the Cascade Range, and typical examples of *S. flavida,* from the Sierra Nevada Mountains, are readily identifiable. Possibly cross breeding has occurred where their habitats overlap, resulting in hybrids that cannot be confidently assigned to either species.

Distribution. CALIFORNIA: *Modoc County: Blackmore*, VII-3-50, M. Wasbauer, 1 paratype (UCB). *Shasta County: Shingletown*, V-24-11, C. D. Michener, 1 paratype (UCB). *Lassen National Park,* VI-28, 29-60, D. J. and J. N. Knull, 5 paratypes, 6 females (OSU); same, *Kelly's Resort,* VI-14-31, Van Dyke, 1 paratype (CAS); same, *Manzanita Lake,* VI-8-41, 1 paratype (Fender); same, *Manzanita Camp,* VI-18-60, 1 paratype (Edwards). *Mt. Lassen*, VII-5-63, D. J. and J. N. Knull, 2 females (OSU); same, 3 mi. SE., VII-8-55, D. L. Dahlston, 1 paratype (UCD). *Manzanita Lake,* VI-12-41, C. Michener, 1 paratype (CNC). *Facht,* VI-24, 27-22, V-3-23, J. O. Martin, 4 paratypes (CAS). *Duck Lake,* V-8-21, J. O. Martin, holotype (CAS). *Plumas County: Bucks Lake*, VII-1-49, W. R. Schreader, 1 paratype (UCD); same, *Clover Valley,* VI-17-23, J. O. Martin, 1 paratype (CAS); same, *Chester,* VI-7, 13-60, D. J. and J. N. Knull, 4 paratypes, 11 females (OSU). *Mineral,* 5 mi. E., VI-9, 26-60, D. J. and J. N. Knull, 24 paratypes (OSU 22, CAS 2), 46 females (OSU). *Sierra County: Webber Lake*, VII-2-59, Linsley, 1 paratype (UCB). *Placer County: Baxters,* VI-3-45, A. T. McClay, 1 paratype (UCD).

(12) **Silis (Silis) nevadica** Green, new species.

Holotype, male; Carson City, Nevada, V-12-41, A. T. McClay. In collection of University of California at Davis.

Body and appendages black, pronotum pale fulvous with all borders black.

Pronotum as in figure 21P. Genitalia as in figure 12, dorsal plate with broad U-shaped emargination, basophyses emerging widely separated, converging apically, tips prominently enlarged on proximal side in lateral view. In ventral view, upper margins of lateral incisure of tegmen strongly angulate at about distal third. Length 6.5 mm.

Distribution. NEVADA: *Carson City,* V-12-41, A. T. McClay, holotype. 1 paratype (UCD).

(13) **Silis (Silis) tenuata** Green, new species.

Holotype, male; Giant Forest, Tulare County, California, 6,500 ft., VII-1915, G. Hopping. In collection of California Academy of Sciences. CAS type number 9083.

Antennae dark, four basal segments pale beneath; palpi dark. Head black, pale in front. Pronotum flavate, anterior border blackish medially, posterior border narrowly dusky. Scutellum black. Elytra flavate, broadly dusky at apex and sides, lateral dark area narrowing anteriorly, not reaching base. Underside black, prothorax pale, ventral segments with paler lateral and apical borders. Legs pale, coxae and femora, except at apex, black; profemora largely pale, metafemora largely black.

Pronotum as in figure 21P. Genitalia as in figure 13, basophyses with exposed tips narrowing to very slender apically. In ventral view, upper margins of lateral incisure of tegmen strongly angulate at about distal third. Median lobe of aedeagus broad in dorso-ventral view, sides not striate. Ventral lobe of tegmen with distinct apical notch, sides subparallel. Length 6.5 mm.

Variations. The pronotum may have the lateral borders also dark. Specimens occur at high altitudes that are black with only the mandibles pale, or with the elytra partly fusco-flavate. Length 5.5–6.5 mm.

Distribution. CALIFORNIA: *Fresno County: Huckleberry Meadow,* 6,500 ft., V-25-10, R. Hopping, 1 paratype; V-VII, 1 paratype (CAS). *Round Meadow, Giant Forest,* 6,400 ft., VII-1915, R. Hopping, 1 paratype (CAS). *Fresno County: Piute Creek,* VII-6-52, 6,200 ft., Peter Raven, 1 paratype (CAS). *Fresno County: Cedar Grove,* V-25-11, R. Hopping, 1 paratype (CAS). *Tulare County: Giant Forest,* 6,500 ft., VII-1915, G. Hopping, holotype (CAS). *Fresno County: McGee Creek,* VII-10-52, 11,000 ft., Peter Raven, 1 male, 1 female (CAS). *Huntington Lake,* VI-26-46, VI-28-40, A. T. McClay, 2 paratypes (UCD); same, *Badger Flat,* VII-20, 22-37, VII-27-48, A. T. McClay, 3 paratypes (UCD). *Tulare County: Dinuba,* VI-19-57, A. T. McClay, 1 paratype (UCD). Above *Lundy,* VII-9, 9-11,000 ft., Wickham, 1

paratype (USNM). *Shaver Lake*, VI-3-37, 1 paratype (Fender). *Inyo County: Mono Pass*, VIII-11-63, R. M. Brown, 1 paratype (CAS).

(14) **Silis (Silis) carbo** Van Dyke.

Silis difficilis carbo Van Dyke, 1918, New York Ent. Soc., Jour., vol. 26, p 168.

Body black, underside of prothorax more or less pale anteriorly each side. Varying with pronotum flavate with black borders, disk sometimes partly blackish, elytra dark fuscous; or with both pronotum and elytra in large part flavate, as in *S. flavida*.

Pronotum as in figure 21P. Genitalia as in figure 14, exposed tips of basophyses normally broad. In ventral view, upper margins of lateral incisure of tegmen angulate at about distal third. In dorso-ventral view, median lobe of aedeagus narrowing to apex; sides longitudinally striate. Ventral lobe of tegmen without, or with very minute, apical notch; sides converging apically. Length 5–6.5 mm.

Distribution. CALIFORNIA: *Fresno County: Rea Lake*, 10,500 ft.; *Bubbs Creek Canyon, Kings River*, 9,700 ft.; 60 *Lake Basin*, 10,500 ft.; *Bullfrog Lake*, 10,600 ft.; *East Lake*, 10,000 ft.; *Huntington Lake*, 7,000 ft. *Tulare County: Rattlesnake; Atwells Mill; Colony Road; Siberian Outpost*, 10,500 ft. *Kaweah*, 7,500 ft. *Monarch Lake. Mt. Mitchell. Sequoia National Park, Alta Peak*, 9,500 to 11,000 ft. *Kings Canyon National Park, Deadman Canyon. Mt. Whitney*, 11,000 ft. *Inyo County: Lone Pine Lake; Monache; Whitney Portal*, 11,500 ft.

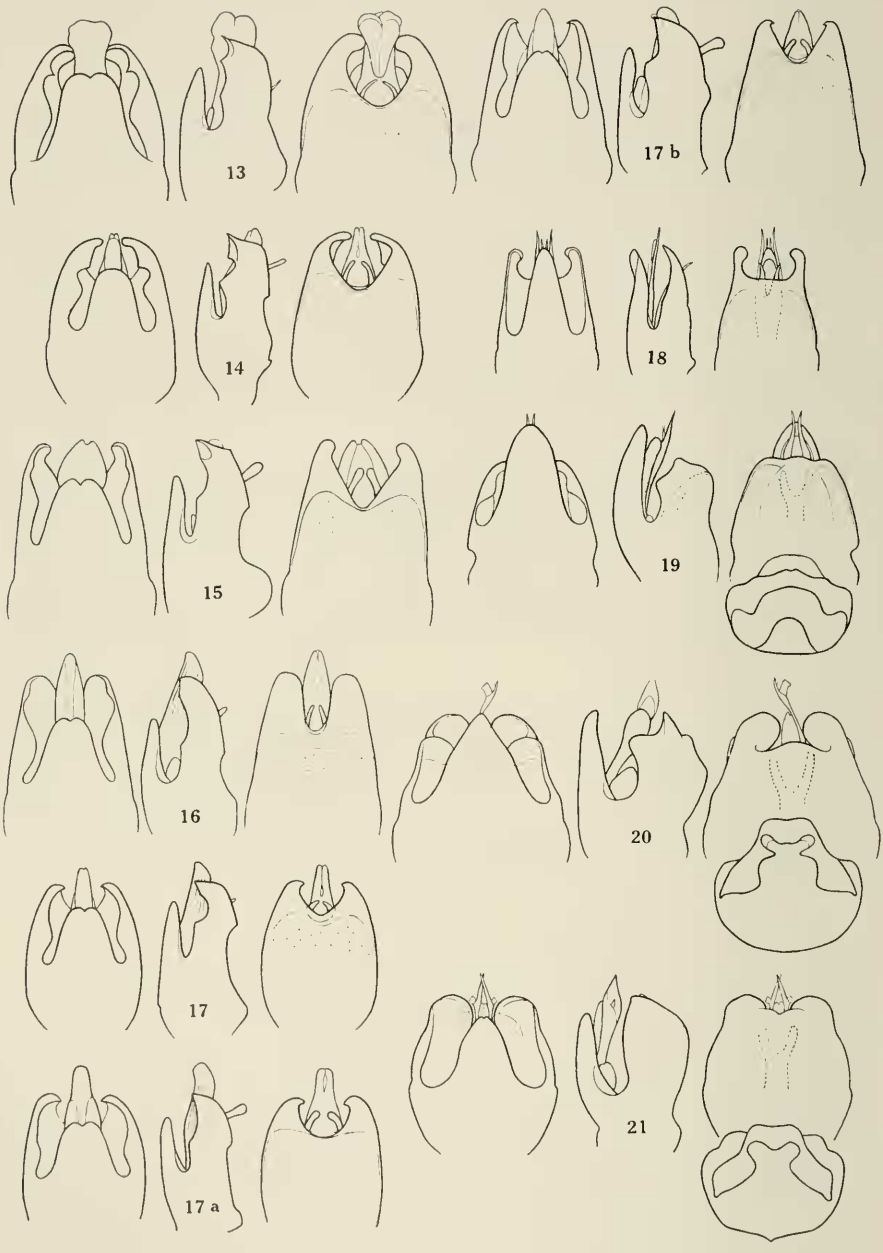
This species was described by Van Dyke as a color variety of *S. difficilis*. It is raised to specific rank because of its isolated habitat, accompanied by apparently constant structural differences in the tegmen, namely, the narrower ventral lobe lacking the apical notch, and the subangulate upper margins of the lateral incisure. The available data indicates that the all-black phase occurs only at altitudes of ten thousand feet or higher.

(15) **Silis (Silis) oregonensis** Green, new species.

Holotype, male; Warner Mountains, Lake County, Oregon, VI-18-22, Van Dyke. In collection of California Academy of Sciences. CAS type number 9084.

Black, pronotum fulvous with all borders narrowly black.

Pronotum as in figure 21P. Genitalia as in figure 15. In lateral view, tips of basophyses straight, rather broad, not narrowing apically. In ventral view, upper margins of lateral incisure of tegmen not angulate at distal third. Emargination of dorsal plate broadly V-shaped, attaining membraneous area. In dorsoventral view, median lobe of aedeagus broad, with small apical notch, sides not striate. Length 6.5 mm.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Variations. The elytra may be partially flavate, as in many *S. difficilis;* or they may be largely flavate, as in *S. flavida.* The apical notch of the median lobe of the aedeagus is often not apparent, due to drying distortion.

Distribution. OREGON: *Lake County: Warner Mountains,* VI-16-22, Van Dyke, holotype, 3 paratypes (CAS); *Klamath County*: *Williamson River* near head, V-30-59, Joe Schuh, 1 paratype (Fender); 11 mi. NE. of *Bly,* VI-7-59, Joe Schuh, 5 paratypes (Fender); 20 mi. N. of *Beatty, Sycan River,* V-30-59, Joe Schuh, 6 paratypes (Fender); 7 mi. W. of *Kano,* 3,000 ft., V-24-58, K. M. Fender, 1 paratype (Fender); 11 mi. NE. of *Bly,* V-5-62, Scott and Schuh, 3 paratypes (Schuh); *Pelican Butte,* VII-8-60, 2 paratypes (Schuh); *Sun Creek,* VI-14-62, J. D. Vertrees, 1 paratype (Schuh); *Fremont National Forest,* 5,000 ft., VI-17-22, Van Dyke, 1 paratype (CAS); *Sun Mountain,* VI-11-56, J. D. Vertrees, 1 paratype (Schuh); 1 mi. N. *Ft. Klamath Junction,* V-25-58, R. K. Eppley, 1 paratype (Edwards). *Upper Klamath Lake, Three Mile Creek,* V-30-60, Joe Schuh, 3 paratypes (Schuh). *Ochoco National Forest,* VI-14-41, Fender, 1 paratype, 1 male (Fender); same, *Wildwood,* V-26-50, 1 paratype (Fender). *Crater Lake,* 7,000 ft., VII-16-22, Van Dyke, 1 paratype (CAS); VII-14-38, A. T. McClay, 1 paratype (UCD); same, Park HQ. D. H. Huntzinger, 3 paratypes (Edwards); same, *Garfield Peak,* VI-27-57, D. H. Huntzinger, 2 paratypes (Edwards). *Jackson County: Butte Falls,* V-22-41, 1 paratype (UCD). *Douglas County: Kelsey Valley,* VI-20-62, J. D. Vertrees, 2 paratypes (Schuh). *Anthony Lake,* VI-12-39, 1 paratype (Fender). *Bear Springs,* VI-6-39, V-4, 26-40, Fender, 4 paratypes (Fender). *Odell Lake,* 3 mi. SE., VI-8-41, Schuh and Gray, 1 paratype (Schuh). CALIFORNIA: *Trinity County: Carville,* VI-16-13, Van Dyke, 1 paratype

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Figures 13–21. Male genitalia; ventral, lateral, and dorsal views, arranged in that order from left to right.

Figure 13. *Silis* (*Silis*) *tenuata* Green, holotype.
Figure 14. *Silis* (*Silis*) *carbo* Van Dyke.
Figure 15. *Silis* (*Silis*) *oregonensis* Green, holotype.
Figure 16. *Silis* (*Silis*) *striatella* Green, holotype.
Figure 17. *Silis* (*Silis*) *difficilis* LeConte.
Figure 17a. *Silis* (*Silis*) *difficilis occidens* Green, holotype.
Figure 17b. *Silis* (*Silis*) *difficilis* subspecies?
Figure 18. *Silis* (*Silis*) *atra* LeConte.
Figure 19. *Silis* (*Silis*) *egregia* Green, holotype. Diagram of posterior orifice of tegmen inserted.
Figure 20. *Silis* (*Silis*) *singularis* Green, holotype. Diagram of posterior orifice of tegmen inserted.
Figure 21. *Silis* (*Silis*) *eximia* Green, holotype. Diagram of posterior orifice of tegmen inserted.

(CAS); *Siskiyou County: Paynes Meadow,* VII-5-60, D. Q. Cavagnaro, 1 paratype (UCD).

(16) **Silis (Silis) striatella** Green, new species.

Holotype, male; Paradise Valley, Mt. Rainier, Washington, VII-24-20, Van Dyke. In collection of California Academy of Sciences. CAS type number 9085.

Head and antennae black. Pronotum pale fulvous with all borders black. Scutellum black. Elytra bicolored, broadly fulvous at base, pale area narrowing distally, extending to about apical fourth, its margins obscure; sutural bead, sides, and apex dark fuscous. Underside and legs mostly dark.

Pronotum as in figure 21P. Genitalia as in figure 16. Emargination of dorsal plate rather narrowly U-shaped, deeper than wide, sides subparallel or somewhat diverging, not curving inward distally, emargination not attaining membraneous area by a conspicuous distance. Upper margins of lateral incisure of tegmen not angulate at distal third. Median lobe of aedeagus with sides longitudinally striate. Length 6 mm.

Variations. The color of the elytra varies from entirely black to almost entirely fulvous. Rarely the sides of the dorsal plate emargination curve somewhat inward distally. Length 6–7.5 mm.

Distribution. BRITISH COLUMBIA: *Midday Valley, Merritt,* V-12, 27-26, E. Rendell, 2 paratypes; V-17-25, J. Stanley, 1 paratype; VI-4-23, R. Hopping, 1 paratype; V-24-23, R. Hopping, 1 paratype (CAS). Same, VI-4, 7-23, R. Hopping, 2 paratypes (CNC). WASHINGTON: *Mt. Rainier: Paradise Valley,* VII-24-20, Van Dyke, holotype, 12 paratypes (CAS); *Paradise Park,* 6,000 ft., VII-5, 31-05, Van Dyke, 2 paratypes (CAS); *Paradise,* VII-1, 4-34, O. Bryant, 8 paratypes (CAS); *Longmire Springs,* 2,500 ft., VII-25-19, Blaisdell, 1 paratype (CAS). *Mt. Rainier,* VII-22-40, 1 paratype (Fender). *Rainier National Park, Sunrise Peak,* VII-24-36, Van Dyke, 1 paratype (CAS). *Pierce County, Fort Lewis,* V-3-46, P. H. Arnaud, 2 paratypes (CAS). *Rimrock,* VI-8-54, H. P. Lanchester, 2 paratypes (Fender). *Spirit Lake,* VII-22-56, 3,800 ft., J. D. Lattin, 1 paratype (OSU).

OREGON: *Bear Springs,* VI-6, 7-39, V-26-40, K. M. Fender, 6 paratypes (Fender). *Mt. Hood, Homestead Inn,* VI-30-27, Van Dyke, 1 paratype (CAS). *Mt. Hood,* 3,000–6,000 ft., VI-23-25, Van Dyke, 3 paratypes (CAS). *Kirby,* IV-27-37, Fred Lawrence, 1 paratype (CAS). *Ochoca National Forest,* VI-13-41, 1 paratype (Fender). *Swim,* VII-2-42, Schuh and Gray, 1 paratype (Schuh). *Parkdale,* VII-1-38, Schuh and Gray, 1 paratype (Schuh). *Klamath County, Little Deschutes River,* VI-5-58, 5 paratypes (Schuh). *Lamola-Tokatee Falls, North Umpqua River,* VI-26-62, 1 paratype (Schuh).

(17) **Silis (Silis) difficilis** LeConte.

Silis difficilis LeConte, 1850, *In:* Lake Superior, by Louis Agassiz, p. 230.

Head black. Pronotum flavate or fulvous with all borders black, varying by reduction but never entirely pale in the male. In one example median extensions of front and rear black borders extend on disk. Scutellum black. Elytra flavate with apex and sides more or less black or fuscous; varying to entirely dark with more or less extensive pale color nearly always evident under brilliant illumination. Underside and legs mostly black.

Pronotum as in figure 21P. Genitalia as in figure 17. Emargination of dorsal plate broadly V- or U-shaped, about as deep as wide, not attaining membraneous area, sides curving inward distally. Basophyses usually extending only slightly through emargination of dorsal plate, narrowing apically in lateral view. Upper margins of lateral incisure of tegmen not angulate at distal third. Median lobe of aedeagus with sides longitudinally striate. Length 5–6.5 mm.

Distribution. QUEBEC: *Gaspe County; Duparquet.* SASKATCHEWAN: *Rockglen; Attons Lake; Saskatoon; Cypress Hills; Prince Albert; Bounty; Beaver Creek; Katepwa.* ALBERTA: *McMurry; Lethbridge; Waterton; Elkwater; Banff; Edmonton; Olds; Pinehen Creek.* BRITISH COLUMBIA: *Atlin; Trinity Valley; Oliver; Creston; Cranbrook; Vernon; Adams Lake.* MICHIGAN: *Marquette.* WISCONSIN: *Sauk County.* SOUTH DAKOTA: *Custer; Spearfish Canyon; Blue Bell.* NEW MEXICO: *Jemez Mountains; Lincoln County.* WYOMING: *Yellowstone National Park; Curtis Canyon* near *Jackson; Teton National Park; Sublette County; Wind River Range.* MONTANA: *Glacier National Park; Mineral County; Fergus County; Big Snowy Peak.* IDAHO: *Wallace; Twin Creek Camp; Moscow; Stanley; Targhee Pass; Baker Creek* NW. of *Ketchum.* WASHINGTON: *Easton.* OREGON: *Lake Wallowa; Meacham; Pine Creek, Baker County; Tollgate, Blue Mountains; Durkee; Jackson County; Pinehurst; Butte Falls; Ashland; Buckhorn Mineral Springs; Deschutes County* between *Suttle Lake* and *Sisters.*

This very widely distributed species is undoubtedly a complex as it is here recognized. It has not been found possible to segregate definitely recognizable taxa, with the exception of the somewhat unstable subspecies following. Exceptions to the bicolored elytra of *S. difficilis* are rare, and occur mostly in Idaho, Montana, and Wyoming. Some Oregon examples with an unusually wide smooth band separating the apex of dorsal plate emargination from the membraneous area, have the elytra usually entirely black.

(17a) **Silis (Silis) difficilis occidens** Green, new subspecies.

Holotype, male: 7 mi. W. of Westgard Pass, Inyo County, California, VI-26-53, W. D. McClellan. In collection of University of California at Davis.

Deep black, pronotum fulvous with all borders black, elytra without trace of paler coloration.

Pronotum as in figure 21P. Genitalia as in figure 17a, similar to *S. difficilis,* differing in basophyses extending well beyond emargination of dorsal plate, somewhat expanding apically as seen in lateral view, emargination attaining membraneous area. Length 5.5 mm.

Variations. No significant variation is noted in this subspecies as it occurs in California east of the Sierra Nevada Range. Progressing eastward through northern Arizona, Utah, and Colorado, the characteristic genitalic distinctions become less obvious, and no paratypes have been designated except from the California area. There are few exceptions to the uniform deep black coloration of the elytra. Length 4.25–6 mm.

Distribution. CALIFORNIA: *Inyo County*: 7 mi. W. of *Westgard Pass,* VI-28-53, W. D. McClellan, holotype, 4 paratypes (UCD); *Big Pine Creek,* 8,000 ft., V-19-47, R. M. Bohart, 2 paratypes (UCD); *Lone Pine,* VI-18-37, N. W. Frazier, 2 paratypes (UCB); *Upper Big Pine Creek,* 8,500–9,500 ft., VII-1-60, W. F. Barr, 2 paratypes (UId). *Mono County: Blanco's Corral, White Mountains,* 10,000 ft., VI-20, 23-53, VII-7-53, J. W. McSwain, 8 paratypes (UCB); same, VI-23, 29-53, 5 paratypes (UCD); same, VI-23-53, H. Nakahihara, 2 paratypes (UCR); *White Mountains,* 10,000 ft., VI-19, 26-61, Buckett, Miller, and Lange, 7 paratypes (UCD 6, CAS 1). *Siskiyou County: Macdoel,* IV-28-49, Joe Schuh, 1 paratype (Schuh). *Gilbert Lake* to *Independence,* VII-17, Wickham, 1 paratype (USNM). *Bubbs Creek,* VII-29, 8,000 ft., Wickham, 1 paratype (USNM). ARIZONA: *White Mountains; Diamond Creek; Grand Canyon; San Francisco Mountains;* 20 mi. S. of *Jacobs Lake; Williams; Flagstaff.* NEVADA: *Elko County: Green Mountain Creek; Angel Lake,* 12 mi. SW. *Wells.* UTAH: *Springville; Ft. Duchesne; Kanesville; Millville; Indian Canyon; Utah Experiment Station; Mapleton; Providence; Daniel Pass,* 2 mi. E. of *Strawberry; Salt Lake County: Dry Canyon; Morgan County: E. Canyon Dam; Wasatch County: Heber; Salt Lake City; Logan Canyon; Cowley Canyon; Card Canyon; Y Mountain, Utah County; Vineyard; Navajo Mountain.* COLORADO: *Coal Creek; Longs Peak Inn; Colorado Agricultural College; Denver; Colorado Springs; Boulder; Camp Creek Railroad Station; Chimney Gulch; Glenwood.*

In a series from French Glen, Oregon (Fender), the tips of the basophyses are variably recurved or enlarged on proximal side, as viewed laterally. They may represent another subspecies, and have been labeled "*Silis near occidens.*"

(18) **Silis (Silis) atra** LeConte.

Silis atra LeConte, 1884, Trans. Amer. Ent. Soc., vol. 12, p. 22.

Black, elytra varying to dark rufo-brunneous.

Pronotum as in figure 22P. Genitalia as in figure 18. Dorsal plate simple, with deep and very wide emargination. Laterophyses with small inconspicuous appendix. With single basophysis furcate submedially. Length 4–5 mm.

Distribution. OREGON: *Odell Lake; Mt. Hood; Tilly Jane Creek;* near *Grant Camp; Summit Meadow, Homestead Inn; Hood River Meadow; Three Sisters, Frog Camp; Diamond Lake; Klamath County, Summit Lake; Wascoe County, Bear Springs; Marion County, Park Butte; Lake County, Beaver Marsh; Mt. Jefferson.* WASHINGTON: *Mt. Rainier, Sunrise; Mt. Adams, Bird Creek; Rimrock; Lake Cle Elum.* NORTHWEST TERRITORY: *Horse Lake Area.*

(19) **Silis (Silis) egregia** Green, new species.

Holotype, male; Warners Hot Springs, California, IV-6-40, G. P. Mackenzie. In collection of California Academy of Sciences, on indefinite loan from K. M. Fender. CAS type number 9086.

Black, prothorax pale fulvous above and beneath.

Pronotum as in figure 23P. Genitalia as in figure 19. Dorsal plate feebly trilobed, posterior orifice of tegmen not constricted below it. Ventral lobe extending well beyond dorsal plate. Laterophyses with small inconspicuous distal appendix. With single basophysis furcate submedially. Length 5.5 mm.

Distribution. CALIFORNIA: *Warners Hot Springs*, IV-6-40, G. P. Mackenzie, holotype (CAS). *Mission Valley*, III-8-28, 1 paratype (SDNH).

(20) **Silis (Silis) singularis** Green, new species.

Holotype, male; Lebec, California, altitude 4,000 ft., V-15-25, J. O. Martin. In collection of California Academy of Sciences. CAS type number 9087.

Black, prothorax pale fulvous above and beneath.

Pronotum as in figure 23P. Genitalia as in figure 20. Dorsal plate trilobed, side lobes prominent, extending far beyond feebly lobed median part. Posterior orifice of tegmen strongly constricted below dorsal plate. Ventral lobe of tegmen and dorsal plate subequal in length. Laterophysis (one missing in holotype) with tip everted and squarely truncate, surpassed by foliately expanded (in lateral view) distal appendix. With single basophysis furcate submedially. Length 8 mm.

Distribution. CALIFORNIA: *Lebec*, 4,000 ft., V-15-25, J. O. Martin, holotype (CAS).

(21) **Silis (Silis) eximia** Green, new species.

Holotype, male; Lockwood Creek near Stauffer Post Office, Ventura County, California, V-7-59, G. I. Stage. In collection of California Academy of Sciences, on indefinite loan from the University of California at Berkeley. CAS type number 9107.

Black, prothorax pale rufous above and beneath.

Pronotum as in figure 23P. Genitalia as in figure 21. Dorsal plate trilobed, side lobes extending moderately beyond median part, which has a shallow broadly angulate emargination. Posterior orifice of tegmen constricted below dorsal plate. Ventral lobe of tegmen not extending as far posteriorly as dorsal plate. Laterophyses with tips everted and squarely truncate, surpassed by tip of foliately expanded (in lateral view) distal appendix. With single basophysis furcate submedially. Length 6.5 mm.

Distribution. CALIFORNIA: *Lockwood Creek,* near *Stauffer Post Office, Ventura County,* V-7-59, G. I. Stage, holotype (CAS). *Pine Creek, Alamo Mountain, Ventura County,* V-6-59, C. W. O'Brien, 1 female, presumably of this species (UCB).

(22) **Silis (Silis) abstrusa** Green, new species.

Holotype, male; San Bernardino County, California, 6 mi. NNE. of Hesperia, IV-16-62, MacNeill, Rentz, Brown, and Lundgren. In collection of California Academy of Sciences. CAS type number 9088.

Black, prothorax pale fulvous above and beneath.

Pronotum as in figure 23P. Genitalia as in figure 22. Dorsal plate trilobed, side lobes extending far beyond median part which is deeply triangular emarginate. Posterior orifice of tegmen constricted below dorsal plate. Ventral lobe of tegmen slightly shorter than dorsal plate. Laterophyses with tips acute, slightly diverging, surpassed by small lineate distal appendix. With single basophysis furcate submedially. Length 6.5 mm.

Distribution. CALIFORNIA: *San Bernardino County,* 6 mi. NNE. of *Hesperia,* IV-16-62, MacNeill *et al.,* holotype (CAS).

(23) **Silis (Silis) arida** Green, new species.

Holotype, male; Isabella, California, IV-5-14. In collection of American Museum of Natural History.

Black, prothorax pale fulvous above and beneath.

Pronotum as in figure 23P. Genitalia as in figure 23. Dorsal plate trilobed, side lobes extending well beyond median part which is prominently lobed. Posterior orifice of tegmen constricted below dorsal plate. Ventral lobe of tegmen slightly shorter than dorsal plate. Laterophyses with tips acute, not diverging, extending about as far posteriorly as tips of large foliately expanded (in lateral view) distal appendix. With single basophysis furcate submedially. Length 7 mm.

Distribution. CALIFORNIA: *Isabella,* IV-5-14, holotype (AMNH).

(24) **Silis (Silis) ursina** Green, new species.

Holotype, male; Bear Valley, California, VI-6-14, R. S. Woglum. In collection of California Academy of Sciences on indefinite loan from the University of California at Riverside. CAS type number 9165.

Black, prothorax pale fulvous above and beneath.

Pronotum as in figure 23P. Genitalia as in figure 24. Dorsal plate trilobed, deeply emarginate, side lobes extending well beyond subtruncate median part. Ventral lobe of tegmen slightly shorter than dorsal plate. In dorso-ventral view, laterophyses arcuately converging distally, tips reversing, acute; appendix inconspicuous, setiform. With single basophysis furcate submedially. Median lobe of aedeagus with horizontally flattened apical process. Length 7 mm.

Distribution. CALIFORNIA: *Bear Valley,* VI-6-14, R. S. Woglum, holotype (UCR). The exact location of Bear Valley, in southern California, could not be determined.

(25) **Silis (Silis) deserticola** Van Dyke.

Silis deserticola Van Dyke, 1918, Jour. New York Ent. Soc., vol. 26, p. 173.

Black, prothorax pale fulvous above and beneath.

Pronotum as in figure 23P. Genitalia as in figure 25. Dorsal plate trilobed, feebly emarginate, side lobes extending but little beyond truncate median part. Posterior orifice of tegmen prominently constricted below dorsal plate. Ventral lobe of tegmen slightly shorter than dorsal plate. Laterophyses with tips acute, not diverging, surpassed by moderately expanded (in lateral view) distal appendix. With single basophysis furcate submedially. Length 7 mm.

Distribution. CALIFORNIA: *Argus Mountains,* May, holotype, and 1 female (USNM). The holotype is USNM number 21695.

(26) **Silis (Silis) incongrua** Green, new species.

Holotype, male; Santa Cruz Mountains, California, Koeble. In collection of California Academy of Sciences. CAS type number 9089.

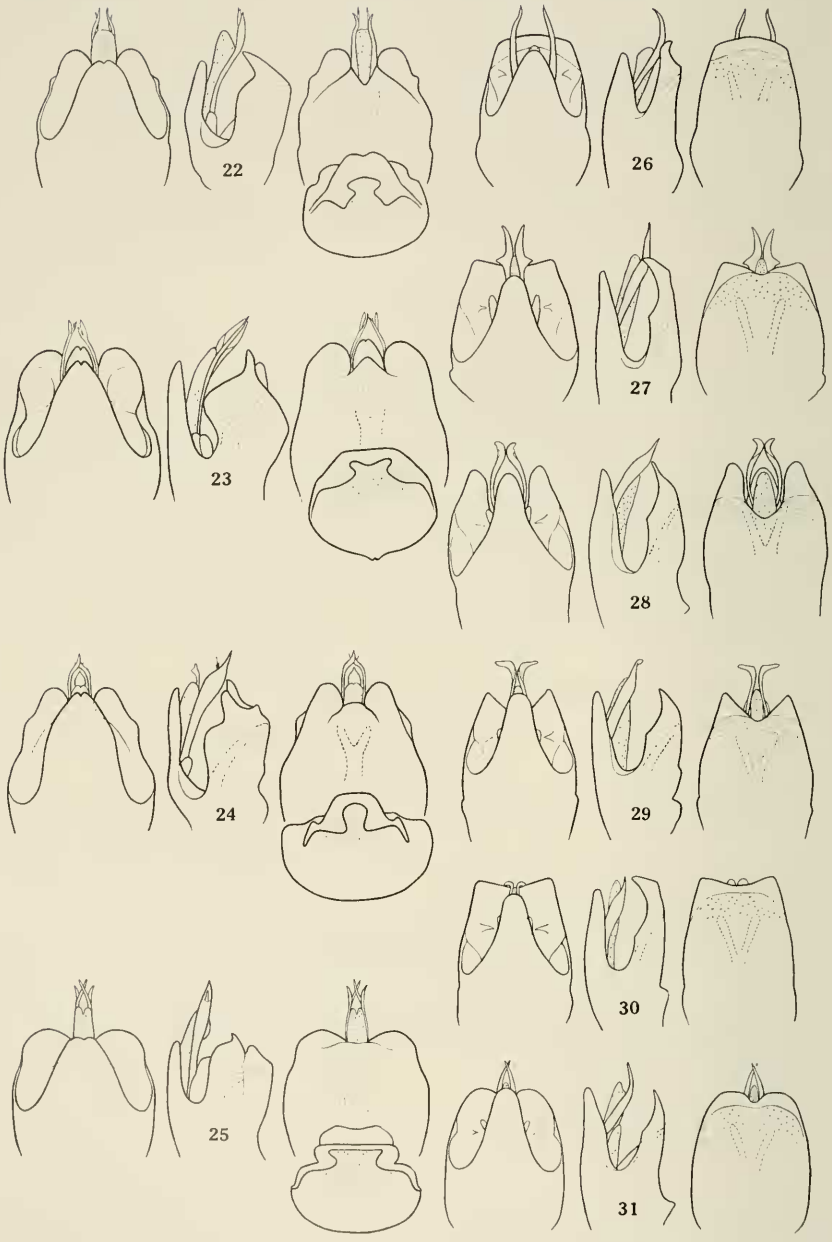
Head blackish, paler in front, antennae and palpi dusky. Pronotum flavate. Scutellum black. Elytra flavate, sutural bead slightly darker, apices black. Beneath, except prothorax, dark. Legs flavate, middle and hind femora basally, and hind tibiae apically, dark.

Pronotum similar to figure 25P except front margin of posterior process not angulate. Genitalia as in figure 26. Dorsal plate not emarginate, posterior margin convex, preceded by broad sclerotized area. Laterophyses long, slender throughout, curving strongly downward and feebly inward. With two basophyses. Length 5.25 mm.

Distribution. CALIFORNIA: *Santa Cruz Mountains,* Koeble, holotype (CAS).

(27) **Silis (Silis) angulata** Green, new species.

Holotype, male; Adams Springs, Lake County, California, F. E. Blaisdell. In collection of California Academy of Sciences. CAS type number 9090.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Head black, clypeus pale, antennae dusky; palpi dark (ex paratype). Pronotum flavate. Scutellum black. Elytra flavate, tips black, sutural bead brunneous. Beneath, except prothorax, dark. Legs flavate, femora largely dark, pale apically.

Pronotum similar to figure 24P. Genitalia as in figure 27. Dorsal plate with broad shallow emargination attaining membraneous area. Laterophyses long, moderately stout, nearly straight, with prominent exterior tooth at about distal third, tips diverging. With two basophyses failing by far to attain apex of dorsal plate emargination. Length 6 mm.

Distribution. CALIFORNIA: *Lake County: Adams Springs*, F. E. Blaisdell, holotype (CAS). *Mark West Springs*, V-11-30, E. P. Van Duzee, 1 paratype (CAS). *Mt. St. Helena*, V-12-26, E. P. Van Duzee, 1 paratype (CAS); same, V-10-20, S. F. Bailey and E. J. Taylor, 1 paratype (UCD).

(28) **Silis (Silis) emarginata** Green, new species.

Holotype, male; Yosemite Valley, California, V-26-25, Blaisdell. In collection of California Academy of Sciences. CAS type number 9091.

Head black, pale in front; antennae dusky, paler beneath basally; terminal palpal segments dark. Pronotum flavate. Scutellum black. Elytra entirely flavate. Beneath dark, front of head and prothorax pale. Legs flavate, tarsi darker, front coxae pale, others largely dark.

Pronotum as in figure 24P. Genitalia as in figure 28. Dorsal plate with large deep U-shaped emargination entering membraneous area. Laterophyses moderately long, curving upward and inward, tips widened and everted. With two basophyses extending beyond apex of dorsal plate emargination. Length 6.5 mm.

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Figures 22–31. Male genitalia; ventral, lateral, and dorsal views, arranged in that order from left to right.

Figure 22. *Silis* (*Silis*) *abstrusa* Green, holotype. Diagram of posterior orifice of tegmen inserted.

Figure 23. *Silis* (*Silis*) *arida* Green, holotype. Diagram of posterior orifice of tegmen inserted.

Figure 24. *Silis* (*Silis*) *ursina* Green, holotype. Diagram of posterior orifice of tegmen inserted.

Figure 25. *Silis* (*Silis*) *deserticola* Van Dyke, holotype. Diagram of posterior orifice of tegmen inserted.

Figure 26. *Silis* (*Silis*) *incongrua* Green, holotype.

Figure 27. *Silis* (*Silis*) *angulata* Green, holotype.

Figure 28. *Silis* (*Silis*) *emarginata* Green, holotype.

Figure 29. *Silis* (*Silis*) *fenderi* Green, holotype.

Figure 30. *Silis* (*Silis*) *subtruncata* Green, holotype.

Figure 31. *Silis* (*Silis*) *macclayi* Green, holotype.

Variations. Rarely the elytra are tipped with black, the sutural bead remaining pale almost without exception. Only one individual has been seen with the sutural bead slightly darkened. The middle and hind femora and hind tibiae are sometimes partly dark. The dorsal plate emargination varies greatly to widely V-shaped with the lobes each side rather acutely angulate. Length 4.5–6.5 mm.

Distribution. CALIFORNIA: *Plumas County: Quincy*, VI-5-63, G. Leskey, 4 paratypes (UCD). *Placer County: Emigrant Gap*, VI-13-39, Cazier, 1 paratype (AMNH). *El Dorado*, 1 paratype (ANSP). *Tallac*, VI-1899, Van Dyke, 1 paratype (CAS). *Calaveras County: Murphy's Canyon*, 2,500 ft., V-15-36, Blaisdell, 1 paratype (CAS). *Tuolumne County: Basin Creek*, 5 mi. S. of *Tuolumne City*, V-31-64, Lundgren, 1 paratype (CAS). *Yosemite*, VI, 1 paratype (Fender); same, 4,000 ft., VI-17-28, VI-12-31, V-20-31, E. O. Essig, 3 paratypes (UCB). *Yosemite National Park*, VI-27-57, P. J. Santana, 1 paratype (Edwards). *Yosemite Valley*, V-22-21, 2 paratypes (UCB); same, V-26-25, Blaisdell, holotype (CAS). *Ahwahnee*, V, Fenyes, 1 paratype (CAS). *Mariposa County: Miami Ranger Station*, V-17, 23-42, C. Kennett, 2 paratypes (UCB); same, V-27-42, W. W. Allen, 2 paratypes (UCB). *Mariposa*, VI, Wickham, 1 paratype (USNM). *Madera County, Coarsegold*, V-12-42, C. Kennett, 1 paratype (UCB). *Fresno County: Cedar Grove*, V-25-11, R. Hopping, 2 paratypes (CAS); *Huckleberry Meadows*, 6,500 ft., VII-19-17, R. Hopping, 1 paratype (CAS); *Sierra National Forest, Stevenson Creek*, V-29-15, R. Hopping, 1 paratype (CAS); *Dalton Creek*, 4,800 ft., V-6-20, H. Dietrich, 1 paratype, 1 female (CU); *Bubbs Creek Canyon, Kings River*, 9,700 ft., VI-8-10, Van Dyke, 1 paratype (CAS). *Tulare County*, VI-12-39, Nunenmacher, 1 paratype (CAS); same, *Kaweah*, IV-12-31, 1 paratype (Fender). *Kaweah*, R. Hopping, 1 paratype (CAS); same, VII-1-35, Fred Lawrence, 3 paratypes (CAS); same, IV-12-31, 3 paratypes (SDNH); same, 1 paratype, 1 male, 3 females (UK). *Sequoia National Park*, V-30-29, VI-13-29, A. T. McClay, 2 paratypes (UCD); same, VI-27, Edith Mank, 1 paratype, 3 females (CU). *North Fork*, V-23-20, H. Dietrich, 1 paratype (CU). *Kern County*, Hubbard and Schwarz, 1 paratype (USNM). *Monarch Lake*, VI-13-13, Van Dyke, 1 paratype (CAS). *Sugar Pine*, Fenyes, 1 paratype (CAS). *Atwell Mill*, V-30-29, A. T. McClay, 1 paratype (UCD). *Mono County: W. Walker River*, 6,000 ft., N. W. Frazier, 1 paratype (UCB). *Southern California*, Horn collection, 1 paratype (ANSP). *Monterey County: Stone Canyon*, IV-21, 27-19, Van Duzee, 3 paratypes (CAS). *San Benito County: Waltham Creek*, V-11-09, R. Hopping, 2 paratypes (CAS). *Diablo Range*, 2,000–4,000 ft., V-12-52, O. Bryant, 1 paratype (CAS).

(29) **Silis (Silis) fenderi** Green, new species.

Holotype, male; Peavine Ridge, near McMinnville, Oregon, VI-9-48, K.

M. Fender. In collection of California Academy of Sciences on indefinite loan from K. M. Fender. CAS type number 9092.

Head black, pale in front; antennae and terminal palpal segments black. Pronotum flavate. Scutellum black. Elytra flavate, tips black, sutural bead brunneous. Beneath dark, except prothorax and head in front. Legs and coxae largely black, tips of femora, protibiae, and base of other tibiae, pale.

Pronotum similar to figure 24P. Genitalia as in figure 29. Dorsal plate with rather deep triangular emargination attaining membraneous area. Laterophyses extending somewhat beyond dorsal plate, tips subrectangularly everted for a considerable distance. With two basophyses not extending as far posteriorly as apex of dorsal plate emargination. Length 5.5 mm.

VARIATIONS. The dorsal plate emargination varies in depth, and sometimes does not attain the membraneous area. The everted tips of the laterophyses may be either acute or blunt, and the angle of eversion may be somewhat obtuse. In one example the sutural bead of the elytra is not appreciably darker. Length 5–6 mm.

DISTRIBUTION. OREGON: *Peavine Ridge,* near *McMinnville,* VI-9-48, K. M. Fender, holotype (CAS); same, VI-11-46, VI-5-45, 2 paratypes (Fender). *Matulius River,* VI-13-47, 1 paratype (Fender). *Corvallis,* VI-12-25, Van Duzee, 1 paratype (CAS); same, VII-3-46, K. R. Hobbs, 1 paratype (OrSU). *Josephine County: Selma,* 3.5 mi. W., V-27-62, Joe Schuh, 1 paratype (Schuh). CALIFORNIA: *Blocksburg,* V-18-35, E. W. Baker, 1 paratype (AMNH). *Humboldt County,* VI-47, Bryant, 1 paratype (CAS).

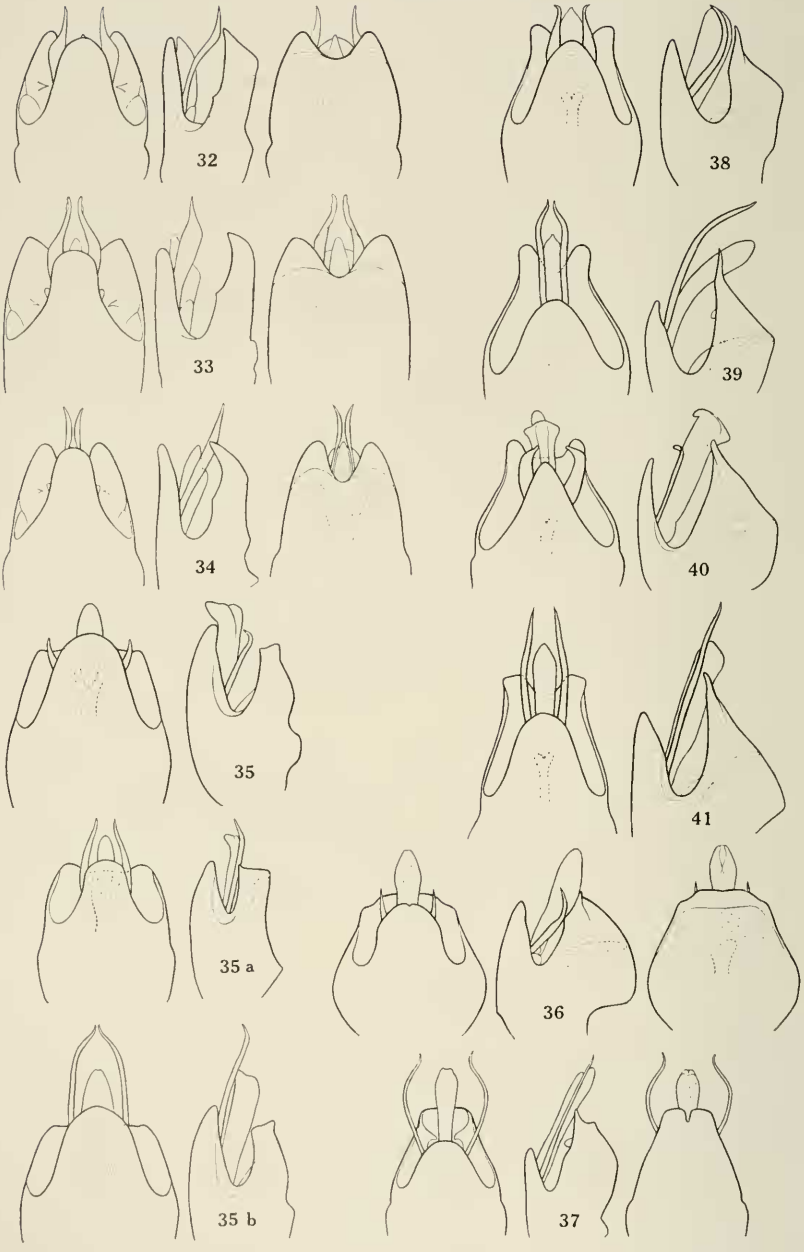
(30) **Silis (Silis) subtruncata** Green, new species.

HOLOTYPE, male; Fairfax, Marin County, California, V-7-11, Van Dyke. In collection of California Academy of Sciences. CAS type number 9093.

Head black, clypeus pale, antennae and palpi dusky. Pronotum flavate. Scutellum black. Elytra flavate, tips black, sutural bead brunneous. Beneath, except prothorax, dark. Legs largely dark, front tibiae and base of other tibiae pale.

Pronotum similar to figure 24P. Genitalia as in figure 30. Dorsal plate with very shallow arcuate emargination, as seen in direct dorsal view, failing to attain membraneous area by a conspicuous distance. Laterophyses not surpassing dorsal plate, everted tips very short. With two basophyses not extending as far posteriorly as apex of dorsal plate emargination. Length 5.5 mm.

VARIATIONS. The laterophyses vary in length, often surpassing the dorsal plate by a short distance; and the everted tips are not at all constant in size or shape. In one example from Fort Seward, tentatively assigned, the laterophyses are more nearly as in *S. fenderi,* while the other diagnostic characters indicate its position here. Specimens from Berkeley and Oakland, and one from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Mill Valley, all unidentified at this time, suggest that several additional species may be involved. Length 5.5–6.5 mm.

Distribution. CALIFORNIA: *Marin County*: *Fairfax,* V-7-11, Van Dyke, holotype (CAS); V-20-11, Van Dyke, 1 paratype (CAS); V-7, 29-11, Blaisdell, 2 paratypes (CAS); V-11, 25-19, Van Duzee, 2 paratypes (CAS); *Fairfax Canyon,* V-18-46, J. J. Dubois, 1 paratype (UCB); *Phoenix Lake,* IV-28-40, C. D. Duncan, 1 paratype (Edwards); *Mill Valley,* V-10-58, H. B. Leech, 1 paratype (CAS); *Mt. Tamalpais,* V-23-09, Van Dyke, 1 paratype (CAS); same, V-7-11, Blaisdell, 1 paratype (CAS). *Sylvania* (Camp Meaker, Sonoma County), May, R. Ecker, 3 paratypes (CAS); same, V-24-1895, 1 paratype (UK). (?)*Humboldt County: Fort Seward*, V-18-35, E. O. Essig, 1 male, tentative identification (UCB).

(31) **Silis (Silis) macclayi** Green, new species.

Holotype, male; Arbuckle, Colusa County, California, IV-20-62, P. M. Marsh. In collection of the University of California at Davis.

Head black, pale in front; antennae and tips of palpi dark, antennae pale beneath basally. Pronotum flavate. Scutellum black. Elytra flavate, tips black, sutural bead brunneous. Beneath, except head in front and prothorax, black. Front and middle legs, including coxae, flavate; tarsi and base of mesofemora dark. Hind legs and coxae black, knees pale.

Pronotum similar to figure 24P. Genitalia as in figure 31. Median lobe of aedeagus not subtriangular in lateral view, its upper margin nearly straight. Dorsal plate with small median V-shaped emargination, lobes each side scarcely deflected, emargination appearing nearly flat transversely in direct posterior

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Figures 32–41. Male genitalia; ventral, lateral, and dorsal views, arranged in that order from left to right.

Figure 32. *Silis* (*Silis*) *crucialis* Green, holotype.

Figure 33. *Silis* (*Silis*) *thermalis* Green, holotype.

Figure 34. *Silis* (*Silis*) *acuta* Green, holotype.

Figure 35. *Silis* (*Silis*) *cava* LeConte, Cave Junction, Josephine County, Oregon. Dorsal view omitted.

Figure 35a. *Silis* (*Silis*) *cava* complex, Miami Ranger Station, Mariposa County, California. Dorsal view omitted.

Figure 35b. *Silis* (*Silis*) *cava* complex, Jackson County, Oregon. Dorsal view omitted.

Figure 36. *Silis* (*Silis*) *arizonica* Van Dyke.

Figure 37. *Silis* (*Silis*) *fenestrata* Van Dyke.

Figure 38. *Silis* (*Silis*) *californica* Fender. Dorsal view omitted.

Figure 39. *Silis* (*Silis*) *reversa* Green, paratype, Keen Camp, California. Dorsal view omitted.

Figure 40. *Silis* (*Silis*) *solitaria* Green, holotype. Dorsal view omitted.

Figure 41. *Silis* (*Silis*) *recta* Green, holotype. Dorsal view omitted.

view. Laterophyses moderately slender, curving downward distally; tips slender, not everted. With two basophyses not extending posteriorly as far as apex of dorsal plate emargination. Length 6 mm.

Variations. The lobes each side of the dorsal plate emargination may be slightly deflected so that the emargination is very broadly and shallowly V-shaped in direct posterior view. The tips of the laterophyses may be straight or diverging in dorsoventral view. Specimens not from the type locality are believed to be conspecific, but they are atypical and have not been designated paratypes. In these the emargination of the dorsal plate is larger and deeper, broadly V-shaped, with the lobes each side somewhat deflected; and the legs are more extensively black. Length 5.5–6.5 mm.

Distribution. CALIFORNIA: *Colusa County: Arbuckle*, IV-20-62, P. M. Marsh, holotype (UCD); IV-13 to V-4-62, P. M. Marsh, 6 paratypes (UCD). *Vreka*, V-10-32, E. O. Essig, 3 males (UCB). OREGON: *Klamath County*: 20 mi. N. *Beatty, Sycan River*, V-30-59, Joe Schuh, 4 males (Fender); *Keno*, V-25-58, J. D. Vertrees, 1 male (Schuh). *Jackson County, Pinehurst*, V-21-61, Joe Schuh, 1 male (Schuh).

(32) **Silis (Silis) crucialis** Green, new species.

Holotype, male; Ben Lomond, Santa Cruz County, California, V-16-31, Van Dyke. In collection of California Academy of Sciences. CAS type number 9094.

Head black, pale in front; antennae and tips of palpi dark, antennae pale beneath basally. Pronotum flavate. Scutellum black. Elytra flavate, tips black, sutural bead dark brunneous. Beneath, except head in front and prothorax, black. Legs including coxae largely dark, protibiae pale, other tibiae pale basally, tips of femora pale.

Pronotum similar to figure 24P. Genitalia as in figure 32. Median lobe of aedeagus not subtriangular in lateral view, its upper margin broadly arcuate. Dorsal plate with large broadly V-shaped emargination, lobes each side strongly deflected, forming a deep U-shaped emargination in direct posterior view. Laterophyses stout, curving downward distally, tips slender, not everted. With two basophyses not extending as far posteriorly as apex of dorsal plate emargination. Length 6 mm.

Variations. The posterior aspect of the dorsal plate emargination is usually more or less V-shaped. The legs vary in color to almost all black, only the knees pale.

Distribution. CALIFORNIA: *Ben Lomond*, VI-7-24, 8 paratypes, 16 females (LAM); IV-31, Saylor, 2 paratypes (UA). *Santa Cruz County: Ben Lomond*, V-16-31, Van Dyke, holotype (CAS). *Santa Cruz*, VI-1-19, Van

Duzee, 1 paratype (CAS). *Felton, Santa Cruz Mountains,* V-15 to 19-07, Bradley, 1 paratype (CU). *La Honda,* V-20-52, O. Bryant, 1 paratype (CAS). *Santa Clara County, Alma College,* V-10-51, H. B. Leech, 1 paratype (CAS).

(33) **Silis (Silis) thermalis** Green, new species.

Holotype, male; Paraiso Springs, California, IV-22-14, L. S. Slevin. In collection of California Academy of Sciences. CAS type number 9095.

Head black, pale in front; antennae and palpi dusky. Pronotum flavate. Scutellum black. Elytra flavate, tips black, sutural bead brunneous. Beneath, except prothorax and head in front, dark. Legs largely dark, tibiae paler.

Pronotum similar to figure 24P. Genitalia as in figure 33. Median lobe of aedeagus elongate subtriangular in lateral view, widest at about distal third where upper margin is subangulate. Dorsal plate with large V-shaped emargination. Laterophyses stout, nearly straight in lateral view, tips slender, not everted. With two basophyses not extending posteriorly as far as apex of dorsal plate emargination. Length 6 mm.

Variations. Nothing of importance noted. Length 5.5–6 mm.

Distribution. CALIFORNIA: *Paraiso Springs,* IV-22-14, L. S. Slevin, holotype (CAS); IV-8-34, IV-18-32, V-6-28, VI-31-23, L. S. Slevin, 4 paratypes (CAS). *Paraiso Hot Springs,* V-4-22, L. S. Slevin, 2 paratypes (CAS).

(34) **Silis (Silis) acuta** Green, new species.

Holotype, male; Carrville, Trinity County, California, VI-26-14, Van Dyke. In collection of California Academy of Sciences. CAS type number 9096.

Head black, clypeus pale; antennae and palpi dusky. Pronotum flavate. Scutellum black. Elytra flavate, tips black, sutural bead brunneous. Beneath, except prothorax and head in front, dark. Front and middle legs flavate, femora basally and mesotibiae distally, dark; hind legs largely dark.

Pronotum similar to figure 24P. Genitalia as in figure 34. Median lobe of aedeagus elongate subtriangular in lateral view, widest at about distal third where upper margin is subangulate. Dorsal plate with large V-shaped emargination. Laterophyses long, rather slender throughout, nearly straight in lateral view, tips feebly diverging. With two basophyses extending posteriorly about as far as apex of dorsal plate emargination. Length 6 mm.

Variations. The upper margin of the median lobe of the aedeagus, beyond the subangulation, may be abruptly re-entrant, forming a protuberance in lateral view. Length 4.5–6 mm.

Distribution. CALIFORNIA: *Trinity County: Carrville,* VI-28-14, Van Dyke, holotype (CAS); VI-4, 16-13, Van Dyke, 2 paratypes (CAS). *Humboldt County: Green Point,* VI-5-16, Blaisdell, 1 paratype (CAS). *Humboldt County: Redwood Canyon,* VI-4-16, Blaisdell, 1 paratype (CAS).

(35) **Silis (Silis) cava** LeConte.

Silis cava LeConte, 1874, Trans. Amer. Ent. Soc., vol. 5, p. 61.

Head flavate in front, black posteriorly; antennae dusky, paler beneath basally; terminal palpal segments black. Pronotum flavate. Scutellum black. Elytra flavate tipped with black, sides dark apically, sutural bead brunneous. Beneath, except head and prothorax, dark. Front and middle legs, including coxae, largely pale; hind legs largely dark.

Pronotum similar to figure 25P. Genitalia as in figure 35. With single basophysis furcate submedially. Laterophyses slender, not extending posteriorly beyond median lobe of aedeagus, turning more or less abruptly downward for a short distance apically. Dorsal plate subtruncate in direct dorsal view. Length 4.5–5.5 mm.

Distribution. OREGON: No definite locality, LeConte type (MCZ). *Josephine County: Cave Junction*, IV-25-38, A. T. McClay, 8 males (UCD 7, CAS 1).

Through the courtesy of Dr. P. J. Darlington, Jr., the author was able to study LeConte's type of this species. In the abundant material available, only the Josephine County series, cited above, agrees accurately in genitalia with the LeConte type. They have been labeled "*Silis cava* Lec., typical."

All others keying here have been labeled "*Silis cava* complex." Some of these, representing variability, may be conspecific with *S. cava,* while others undoubtedly comprise several valid species. All attempts at segregating these have failed. The specimens all have in common a single basophysis furcate submedially, and the dorsal plate subtruncate in direct dorsal view. They differ confusingly in the length and curvature of the laterophyses, the length of the ventral lobe compared with the dorsal plate, and the posterior formation of the latter (figures 35a, 35b). Their distribution follows.

Distribution. OREGON: *Yamhill County, Meadow Lake. Peavine Ridge,* near *McMinnville. Josephine County, Wilderville. Jackson County: Butte Falls; Griffin Creek;* summit *Green Springs Highway, Jacksonville. Ashland. Klamath County, Rocky Point. Klamath Falls*: above *Geary Ranch; Algoma. Upper Klamath Lake.* CALIFORNIA: *Trinity County: Eagle Creek. Mendocino County: Yorkville; Big Dam Creek. Lake County: Lakeport. Yolo County, Cache Creek Canyon. Plumas County: Belden; Quincy; Johnsville. Oroville. Placer County, Baxters. Applegate. El Dorado County: Fallen Leaf; Pollock Pines. El Dorado. Tallac. Mokelumne Hill. Calaveras County,* near *Dorrington. Yosemite. Yosemite National Park. Mariposa County: Miami Ranger Station. San Diego County.*

A single specimen from a series of "*S. cava* complex" collected at Quincy, Placer County, California, has the ventral lobe of the tegmen longitudinally divided by a deep and narrow emargination. The emargination is perfectly

symmetrical and shows no indication of having been caused by a fracture. A somewhat similar deformity has been noted in several specimens of the *Silis pallida* group.

(36) **Silis (Silis) arizonica** Van Dyke.

Silis arizonica Van Dyke, 1918, New York Ent. Soc., Jour., vol. 26, p. 174.

Black, prothorax pale fulvous above and beneath.

Pronotum as in figure 26P. Genitalia as in figure 36. Dorsal plate not emarginate. Laterophyses moderately slender, curving downward distally, shorter than median lobe of aedeagus. With single basophysis, tip expanded and notched. Length 6–7 mm.

Distribution. ARIZONA: *Williams*, V-27 to VI-7, Barber and Schwarz, 8 males, 1 female (USNM). *Ashfork*, V-31-62, G. H. Nelson, on *Pinus ponderosa*, 2 males (Nelson). *Prescott*, holotype (CAS).

(37) **Silis (Silis) fenestrata** Van Dyke.

Silis fenestrata Van Dyke, 1918, Jour. New York Ent. Soc., vol. 26, p. 175.

Black, pronotum pale fulvous with all borders black. Beneath, except prothorax, black.

Pronotum as in figure 27P, lateral incisure closed by backward extension of anterior process. Genitalia as in figure 37. Dorsal plate with small variable emargination, sometimes lacking. Laterophyses long, very slender throughout, turning downward distally, sometimes rotated to form a lyriform pattern as shown in figure. With single basophysis, tip expanded and notched. Length 5–5.5 mm.

Distribution. CALIFORNIA: *Bear Lake*, VI-15-17, Van Dyke, 1 male (CAS). *San Bernardino County: Barton Flats*, V-30-58, M. E. Erwin, 2 males (UCD). *San Jacinto Mountains, Marion Mountain Camp*, VII-1-52, A. T. McClay, 1 male (UCD). *Tahquitz Valley*, VI-3-40, H. T. Reynolds, 2 males (UCB, Fender). *San Bernardino Mountains, Mill Creek*, V-6, 16, 23-48, Timberlake, 4 males, 1 female (Timberlake); same, 6,200 ft., V-22-38, 1 male (Timberlake) *Mt. San Jacinto*, holotype (CAS).

The emargination of the dorsal plate is more or less variable in most *Silis* species, but nowhere else has there been encountered such extreme variation as that occurring in *S. fenestrata*. In the female the black pronotal borders are reduced to the anterior border and the median half of the basal border.

(38) **Silis (Silis) californica** Fender.

Silis californica Fender, 1948, Wasmann Collector, vol. 7, p. 119.

Head black, pale in front, antennae and palpi dark. Pronotum fulvous. Scutellum black. Elytra appearing totally black, but disk usually showing

partly fusco-flavate under brilliant illumination. Beneath, except prothorax, dark. Legs and coxae black, anterior pair partly pale.

Pronotum similar to figure 28P. Genitalia as in figure 38. Dorsal plate with large deep emargination. Laterophyses broad except apically, curving downward distally for a variable part of their length. With single basophysis, tip expanded and notched. Length 5–7 mm.

Distribution. CALIFORNIA. *Inyo County: Panamint Mountains; Whitney Portal. San Jacinto Mountains; Idyllwild; Tahquitz Valley. Keen Camp. Laguna. San Diego County: Otay Mountains.* NEVADA: *Charleston Mountains, Kyle Canyon.*

A specimen from Wrightwood, San Bernardino County, California, agrees with the description of *S. californica*, except the tip of the basophysis is not expanded, like in *S. reversa*. It has been labeled "near *californica*" (UCD).

(39) **Silis (Silis) reversa** Green, new species.

Holotype, male; Santa Rosa Mountain, California, VI-15-46, D. J. and J. N. Knull. In collection of Ohio State University.

Head black, clypeus pale; antennae black, paler beneath basally; terminal palpal segments black. Pronotum pale fulvous. Scutellum black. Elytra appearing totally black, but disk showing partly fusco-flavate under brilliant illumination. Beneath, except prothorax, dark. Legs black, anterior coxae partly pale.

Pronotum similar to figure 28P. Genitalia as in figure 39. Dorsal plate with large deep emargination. Laterophyses long, slender, curving upward distally. With single basophysis, tip notched but not expanded. Length 6.5 mm.

Variations. The color of the elytra, under brilliant illumination, varies from almost entirely dark to fusco-flavate with base, sides, and apex blackish. The front legs may be largely pale. Length 5.5–6.5 mm.

Distribution. CALIFORNIA: *Santa Rosa Mountain,* VI-15-46, D. J. and J. N. Knull, holotype, 1 paratype (OSU), 1 paratype (Fender). *Keen Camp,* V-14-46, D. J. and J. N. Knull, 4 paratypes (OSU 2, Fender 2); same, V-24-46, 1 paratype (OSU). *San Jacinto Mountains, Pine Cove,* VI-4-39, E. S. Ross, 1 paratype (UCB).

(40) **Silis (Silis) solitaria** Green, new species.

Holotype, male; Sequoia National Park, California, 2,000–3,000 ft., V-17-29, A. T. McClay. In collection of California Academy of Sciences. CAS type number 9097.

Head black, pale in front, terminal segment of maxillary palpi black; basal segment of antennae pale, others missing. Pronotum flavate. Scutellum black. Elytra flavate, tips black, sutural bead not darker. Beneath, except prothorax, dark. Legs, including coxae, largely pale; tarsi, basal half of middle and hind femora, and metacoxae, dark.

Pronotum similar to figure 28P. Genitalia as in figure 40. Dorsal plate with wide subtruncate emargination. Laterophyses broad, tips bent strongly inward and downward. With single basophysis, tip expanded and notched. Length 6.5 mm.

Variations. The two paratypes have the inverted tips of the laterophyses longer and more acute than in the holotype. Length 6.5–7 mm.

Distribution. CALIFORNIA: *Sequoia National Park*, 2,000–3,000 ft., V-17-29, A. T. McClay, holotype (CAS). *Kings River Canyon*, V-25, 26-48, A. T. McClay, 2 paratypes (UCD).

(41) **Silis (Silis) recta** Green, new species.

Holotype, male; Ahwahnee, California, May, A. Fenyes. In collection of California Academy of Sciences. CAS type number 9098.

Head black, pale in front; antennae and tips of palpi black. Pronotum flavate. Scutellum black. Elytra flavate, tips black, sutural bead not darker. Beneath, except prothorax, dark. Legs and coxae largely pale; tarsi, base of middle and hind femora, tips of hind tibiae, and metacoxae, dark.

Pronotum as in figure 28P. Genitalia as in figure 41. Dorsal plate with deep rounded emargination. Laterophyses nearly straight, slender throughout, tips not diverging. With single basophysis, tip expanded and notched. Length 7 mm.

Variations. The laterophyses may curve more obviously inward and downward than in the holotype, but always they are slender with the tips not diverging. The emargination of the dorsal plate may have the apex subtruncate. Length 5.25–7 mm.

Distribution. CALIFORNIA: *Ahwahnee*, May, A. Fenyes, holotype, 1 paratype, 1 female (CAS). *Yosemite Valley*, VII-8-30, F. E. Blaisdell, 1 paratype (CAS); VI-27-21, 1 paratype (CAS). *Lebec*, V-30-37, Andrews and Martin, 1 paratype (LAM). No definite locality, 2 paratypes (ANSP).

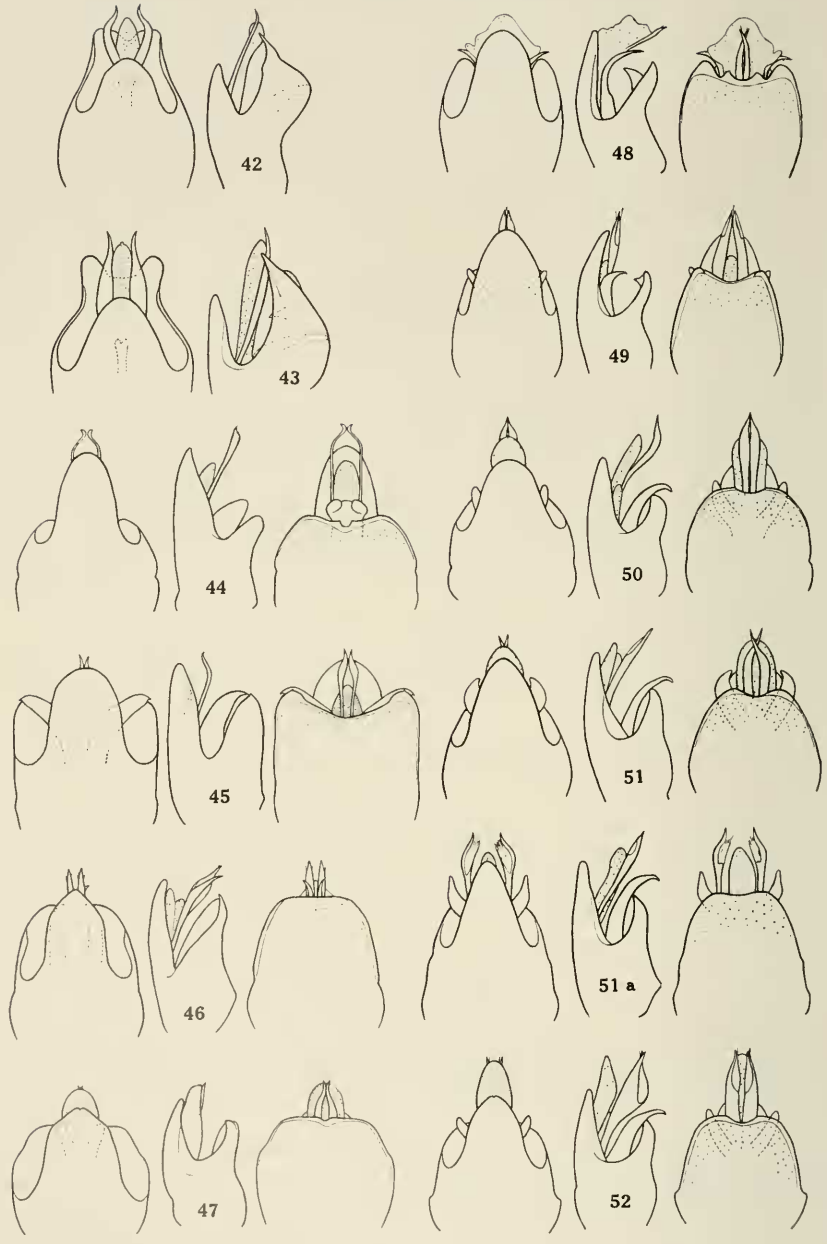
(42) **Silis (Silis) angelica** Green, new species.

Holotype, male; Waterman Canyon, California, V-28-16, J. O. Martin. In collection of California Academy of Sciences. CAS type number 9099.

Head black, pale in front; antennae and palpi dark. Pronotum flavate. Scutellum black. Elytra flavate, tips black, sutural bead slightly darker. Beneath, except prothorax, dark. Front legs and coxae largely pale, others largely dark.

Pronotum similar to figure 28P. Genitalia as in figure 42. Dorsal plate with rather small rounded emargination. Laterophyses moderately broad, curving inward at about distal fourth, tips diverging forming a lyre-shaped pattern. With single basophysis, tip expanded and notched. Length 6 mm.

Variations. In one example the tips of the laterophyses are almost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rectangularly everted, and the dorsal plate emargination is wide and subtruncate (LAM). Length 5.5–6 mm.

Distribution. CALIFORNIA: *Waterman Canyon* (south slope, San Bernardino Mountains, San Bernardino County), V-28-16, J. O. Martin, holotype; same, V-27-16, 1 paratype (CAS). *San Bernardino Mountains,* 6,000 ft., VI-7-1898, 1 paratype (LAM); same, *4 mi. S. of Camp Angelus,* V-24-58, G. H. Nelson, 1 paratype, 3 females (Nelson). *Los Angeles County: San Gabriel Canyon,* V-18-32, 1 paratype (AMNH). *Mt. San Antonio* (Los Angeles County), 10,700 ft. (corrected, 10,059 ft.), VII-3-11, P. H. Timberlake, 1 paratype (USNM).

(43) **Silis (Silis) latestyla** Green, new species.

Holotype, male; Fort Tejon, Kern County, California, V-14-28, Van Dyke. In collection of California Academy of Sciences. CAS type number 9100.

Head black, pale in front; antennae and terminal palpal segments dark. Pronotum flavate. Scutellum black. Elytra flavate, tips and sides distally black, sutural bead not darker. Beneath, except prothorax and metasternum, dark. Legs and coxae largely pale, tarsi and basal half of metafemora black.

Pronotum similar to figure 28P. Genitalia as in figure 43. Dorsal plate with wide subtruncate emargination. Laterophyses broad, curving feebly downward, tips somewhat diverging. With single basophysis, tip notched, not appreciably expanded. Length 6.5 mm.

Variations. The dark color of the sides of the elytra distally is variable in extent, sometimes lacking; the sutural bead varies to more or less dark. The color of the legs varies to largely dark. Length 6–7 mm.

Distribution. CALIFORNIA: *Fort Tejon, Kern County,* V-14-28, Van Dyke, holotype, 2 paratypes (CAS); same, V-29-27, 1 paratype (USNM). *Ventura County, Mt. Pinos,* VI-12-04, F. Grinnell, 2 paratypes (CAS). *Lebec,*

←

Figures 42–52. Male genitalia; ventral, lateral, and dorsal views, arranged in that order from left to right.

Figure 42. *Silis (Silis) angelica* Green, holotype. Dorsal view omitted.
Figure 43. *Silis (Silis) latestyla* Green, holotype. Dorsal view omitted.
Figure 44. *Silis (Silis) fabulosa* Green, holotype.
Figure 45. *Silis (Silis) divaricata* Green, holotype.
Figure 46. *Silis (Silis) montanica* Green, holotype.
Figure 47. *Silis (Silis) lecontei* Green, holotype.
Figure 48. *Silis (Silis) dentigera* Green, holotype.
Figure 49. *Silis (Silis) disjuncta* Green, holotype.
Figure 50. *Silis (Silis) triplicata* Green, holotype.
Figure 51. *Silis (Silis) protracta* Green, holotype.
Figure 51a. *Silis (Silis)* sp. near *protracta?*
Figure 52. *Silis (Silis) simulata* Green, holotype.

4,000 ft., V-13-28, J. O. Martin, 1 paratype (CAS). *Los Angeles County: Camp Baldy*, VI-26-50, J. D. Paschke, 1 paratype (UCB). *San Bernardino County: Camp Baldy*, VI-20-37, A. T. McClay, 1 paratype (UCD); same, VI-29-56, H. R. Moffitt, 1 paratype (UCD). *San Bernardino Mountains,* 6,000 ft., VI-7-1898, 1 paratype (LAM).

(44) **Silis (Silis) fabulosa** Green, new species.

Holotype, male; Grand Coulee, Washington, IV-4-34, L. T. Turner. In collection of California Academy of Sciences. CAS type number 9101.

Body and appendages deep black; pronotum fulvous with all borders black, basal black border extending indefinitely forward, no median maculation of disk. Underside of head in front, and of prothorax except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 44. Dorsal plate with small semicircular emargination in the inflexed sclerotized posterior border. Laterophyses long, slender, lyrate, without distal appendix. With single basophysis bilaterally enlarged at tip. Length 5.5 mm.

Variations. The lateral black border of the prothorax may be much reduced above and beneath; the basal black border may not extend forward. Length 5–6 mm.

Distribution. WASHINGTON: *Grand Coulee,* IV-4-34, L. T. Turner, holotype (CAS). *Grand Coulee, Dry Falls,* IV-20-35, M. H. Hatch, 6 paratypes (UW). *Grant County: Electric City*, IV-12-42, Rogers, 2 paratypes (UW).

(45) **Silis (Silis) divaricata** Green, new species.

Holotype, male; Lind, Washington, IV-23-19, F. R. Cole. In collection of California Academy of Sciences. CAS type number 9102.

Body and appendages deep black; pronotum fulvous with all borders black, basal black border extending indefinitely forward, no median maculation of disk. Underside of head in front, and of prothorax except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 45. Basophyses widely divaricate, attaining posterior margin of dorsal plate exterior to a minute marginal denticulation each side, margin between denticulations not inflexed or thickened. Laterophyses without distal appendix. Length 5.25 mm.

Distribution. WASHINGTON: *Lind,* IV-23-19, F. R. Cole, holotype (CAS).

(46) **Silis (Silis) montanica** Green, new species.

Holotype, male; Florence, Montana, V-16-13, H. P. Wood. In collection of U. S. National Museum.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, narrow in front and broad at base, connecting anterior and basal black borders. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 46. Basophyses arcuately subparallel, not surpassing posterior margin of dorsal plate, this not inflexed and without marginal teeth. Laterophyses moderately slender, feebly curving upward, appendix large and prominent, surpassing tip of laterophysis. Length 5.5 mm.

Variations. The median black vitta of the pronotum may be narrowly interrupted in front, not quite attaining the anterior black border. Length 5.5–6 mm.

Distribution. MONTANA: *Florence,* V-16-13, H. P. Wood, holotype, 2 paratypes (USNM).

(47) **Silis (Silis) lecontei** Green, new species.

This name is proposed for a specimen in the LeConte collection, at the Museum of Comparative Zoology, bearing labels "Van., male" and "vulnerata TYPE 3379," the latter an MCZ label. LeConte's locality designation presumably refers to Vancouver, British Columbia, which disqualifies the specimen as the original type of *S. vulnerata,* described from Oregon.

Body and appendages black, disk of pronotum with large fulvous spot each side.

Pronotum similar to figure 29P. Genitalia as in figure 47. Basophyses attaining posterior margin of dorsal plate, tips not visible beyond sides of ventral lobe in direct ventral view. Posterior margin of dorsal plate without distinct marginal teeth, a single short inflexed median lobe separating tips of basophyses. Laterophyses apparently without distal appendix. Length below average (not measured).

Distribution. "Van.," presumably Vancouver, British Columbia, holotype (MCZ).

(48) **Silis (Silis) dentigera** Green, new species.

Holotype, male; Hood River, Oregon, Childs Collection, 4-15 (mounted with female). In collection of California Academy of Sciences on indefinite loan from Oregon State University. CAS type number 9051.

Body and appendages deep black, pronotum fulvous with all borders black, disk without median vitta. Underside of head in front, and of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 48. Basophyses long, slender in more than distal half, curving outward and upward but not attaining dorsal plate (taken from copulating pair, may not be normal position).

Marginal teeth of dorsal plate very large and much retracted, plainly visible from direct lateral viewpoint. Laterophyses slender, ascending, appendix inconspicuous. Length 5 mm.

Distribution. OREGON: *Hood River,* Childs, 4-15, holotype, 1 female (CAS).

(49) **Silis (Silis) disjuncta** Green, new species.

Holotype, male; Gifford, Idaho, 2,900 ft., V-6-49, W. F. Barr. In collection of California Academy of Sciences on indefinite loan from the University of Idaho. CAS type number 9052.

Body and appendages deep black, pronotum largely black, disk with dusky fulvous area each side. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P, paler areas irregularly elevated, forming a rough semicircle (perhaps not normal). Genitalia as in figure 49. Basophyses short and stout, curving upward but not attaining dorsal plate. Marginal teeth of dorsal plate larger than usual, retracted, plainly visible from direct lateral viewpoint. Laterophyses straight, appendix inconspicuous. Length 5 mm.

Distribution. IDAHO: *Gifford,* V-6-49, 2,900 ft., W. F. Barr, holotype (CAS).

(50) **Silis (Silis) triplicata** Green, new species.

Holotype, male; Moscow, Idaho, May 13, 1928, altitude 2,800 ft. In collection of California Academy of Sciences on indefinite loan from the University of Idaho. CAS type number 9059.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, narrow in front and broad at base, connecting anterior and basal black borders. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 50. Basophyses long, divergent, extending well beyond posterior margin of dorsal plate, tips curving slightly inward in ventral view. Marginal teeth of dorsal plate large and acute. In lateral view, laterophyses feebly sinuate, curving downward distally, parallel and straight in dorsal view; appendix not apparent. Length 5.25 mm.

Distribution. IDAHO: *Moscow,* V-13-28, 2,800 ft., holotype (CAS); 5 paratypes (UId). *Moscow, Paradise Ridge,* V-7-32, 3,000 ft., J. Gillette, 2 paratypes (UId). *Lenore,* V-7-38, 1,000 ft., E. Ritzheimer, 1 paratype (UId). WASHINGTON: *Uniontown,* V-3-60, V-20-39, 2 paratypes (Fender). *Pullman,* August, 1 paratype (USNM).

(51) **Silis (Silis) protracta** Green, new species.

Holotype, male; Spalding, Idaho, Nez Perce County, IV-18-48, W. F. Barr. In collection of California Academy of Sciences on indefinite loan from the University of Idaho. CAS type number 9057.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, narrow in front and broad at base, connecting anterior and basal black borders. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 51. Basophyses long, divergent, extending well beyond posterior margin of dorsal plate, tips curving strongly inward in ventral view. Marginal teeth of dorsal plate large and acute. Laterophyses nearly straight in lateral view, curving inward distally in dorsal view, appendix small and inconspicuous. Length 5.25 mm.

Variations. The basophyses vary in length, and the inward curvature of the tips varies in degree but is always evident. A single specimen of doubtful position, from Lenore, Idaho, figure 51a (Nelson), differs from *S. protracta* mainly in the expanded appendix of the laterophyses, plainly visible in dorsoventral view. Both the laterophyses and basophyses are more widely divergent. It is possible that these differences may be explained as being preliminary to, or immediately following, copulation. Length 5–5.75 mm.

Distribution. IDAHO: *Spalding, Nez Perce County,* IV-18-48, W. F. Barr, holotype (CAS); 6 paratypes (UId); same, III-28-53, C. J. Tarhaar, 1 paratype (UId). *Lewiston, Lewiston Grade,* IV-23-38, J. W. Zuckel, 1 paratype (UId). *Lewiston,* IV-23-38, M. D. Bentley, 1 paratype (UId). WASHINGTON: *Colton,* V-3-60, W. W. Cone, 2 paratypes, 1 female (UW).

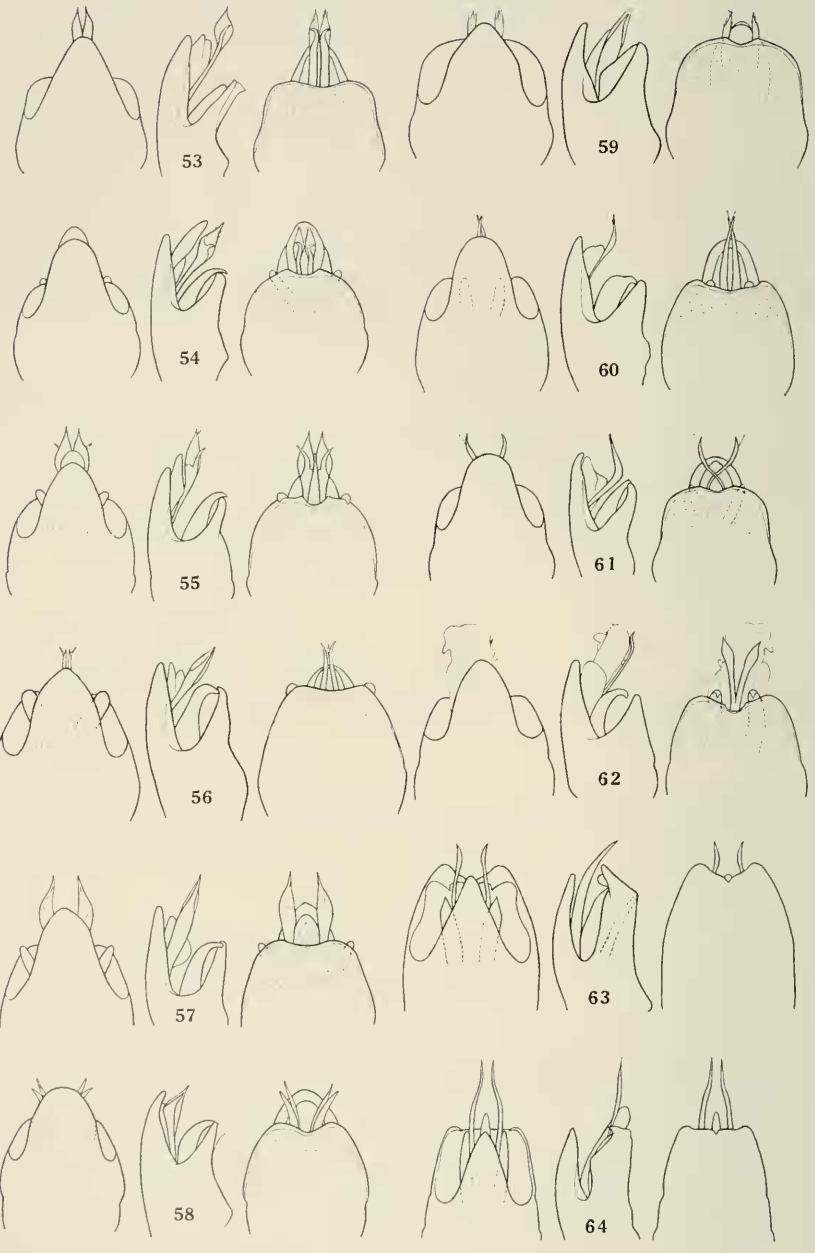
(52) **Silis (Silis) simulata** Green, new species.

Holotype, male; Lenore, Idaho, V-7-38, altitude 1,000 ft., H. C. Eig. In collection of California Academy of Sciences on indefinite loan from the University of Idaho. CAS type number 9058.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta of nearly uniform width, except for a submedian constriction, connecting anterior and basal black borders. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 52. Basophyses long, divergent, extending well beyond posterior margin of dorsal plate, tips not appreciably curving inward in ventral view. Marginal teeth of dorsal plate large and acute. Laterophyses straight, much expanded on dorsal side in lateral view, appendix conspicuous. Length 5 mm.

Distribution. IDAHO: *Lenore,* V-7-38, altitude 1,000 ft., H. C. Eig, holotype (CAS).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(53) **Silis (Silis) introversa** Green, new species.

Holotype, male; 4 mi. S. of Whitebird, Idaho County, Idaho, IV-4-60, A. R. Gittins. In collection of California Academy of Sciences on indefinite loan from the University of Idaho. CAS type number 9053.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, narrow in front and broad at base, connecting anterior and basal black borders. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 53. Basophyses diverging, abruptly converging from about distal fourth, not visible each side of ventral lobe of tegmen in direct ventral view, tips resting on apices of small closely placed marginal teeth of dorsal plate. In lateral view, appendix prominent, foliate, much larger than contiguous portion of laterophysis and surpassing its tip. Length 6 mm.

Distribution. IDAHO: 4 *mi. S. of Whitebird, Idaho County,* IV-4-60, A. R. Gittins, holotype (CAS), 1 paratype (UId).

(54) **Silis (Silis) perfoliata** Green, new species.

Holotype, male; Lewiston, Idaho, IV-30-32, J. Gillette. In collection of California Academy of Sciences on indefinite loan from the University of Idaho. CAS type number 9055.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, narrow in front and broad at base, connecting anterior and basal black borders. Underside of head in front, and of prothorax except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 54. Basophyses divergent, straight, tips visible each side of ventral lobe of tegmen in direct ventral view, extending around posterior margin of dorsal plate exterior to

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Figures 53–64. Male genitalia; ventral, lateral, and dorsal views arranged, in that order from left to right.

Figure 53. *Silis (Silis) introversa* Green, holotype.
Figure 54. *Silis (Silis) perfoliata* Green, holotype.
Figure 55. *Silis (Silis) proxima* Green, holotype.
Figure 56. *Silis (Silis) abrupta* Green, holotype.
Figure 57. *Silis (Silis) lobata* Green, holotype.
Figure 58. *Silis (Silis) vulnerata* LeConte.
Figure 59. *Silis (Silis) parallela* Green, holotype.
Figure 60. *Silis (Silis) constricta* Green, holotype.
Figure 61. *Silis (Silis) barri* Green, holotype.
Figure 62. *Silis (Silis) insolita* Green, holotype.
Figure 63. *Silis (Silis) pallida* Mannerheim, Sitka, Alaska.
Figure 64. *Silis (Silis) insperata* Green, holotype.

marginal tooth each side. In lateral view, appendix prominent, foliate, much larger than contiguous portion of laterophysis and surpassing its tip. In dorsal view, diverging tips of laterophyses short, abruptly everted. Length 4.5 mm.

VARIATIONS. In one paratype the basophyses extend beyond the dorsal plate, as in *S. protracta* and allied species. Any individuals keying to that section are removed by couplet 54. Length 4.5–5.5 mm.

DISTRIBUTION. IDAHO: *Lewiston,* IV-30-32, 550 ft., J. Gillette, holotype (CAS). *Nez Perce County, Central Grade,* IV-13-60, A. R. Gittins, 2 paratypes (UId).

(55) **Silis (Silis) proxima** Green, new species.

HOLOTYPE, male; Webb, Nez Perce County, Idaho, IV-8-49, W. F. Barr. In collection of California Academy of Sciences on indefinite loan from the University of Idaho. CAS type number 9056.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, narrow in front and broad at base, connecting anterior and basal black borders. Underside of head in front, and of prothorax except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 55. Basophyses divergent, straight, tips visible each side of ventral lobe of tegmen in direct ventral view, extending around posterior margin of dorsal plate exterior to marginal tooth each side. In lateral view, appendix prominent, foliate, much larger than contiguous portion of laterophysis and surpassing its tip. In dorsal view, diverging tips of laterophyses longer than in *S. perfoliata,* regularly arcuate. Length 5.5 mm.

DISTRIBUTION. IDAHO: *Webb, Nez Perce County,* IV-8-49, W. F. Barr, holotype (CAS). *Gifford,* V-27-49, 2,900 ft., W. F. Barr, 2 paratypes (UId).

(56) **Silis (Silis) abrupta** Green, new species.

HOLOTYPE, male; 33 mi. W. of Yakima, Washington, V-8-49, G. H. Nelson. In collection of California Academy of Sciences. CAS type number 9103.

Body and appendages deep black; pronotum fulvous with all borders narrowly black, disk without median vitta. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 56. In ventral view, basophyses divergent, straight, tips visible each side of ventral lobe of tegmen, attaining posterior margin of dorsal plate exterior to marginal tooth each side. In lateral view, basophyses turning abruptly upward distally. Laterophyses straight and rather slender in lateral view, appendix broader than, but not surpassing, tip of laterophysis. Length 6 mm.

VARIATIONS. The laterophyses vary somewhat in width, and in one example they curve slightly downward distally. Length 5–6 mm.

Distribution. WASHINGTON: *Yakima,* VI-8-54, H. P. Lanchester, 1 paratype (Fender). *33 mi. W. of Yakima,* V-8-49, G. H. Nelson, holotype, 2 paratypes, 1 female (CAS); same, C. Chastain, 1 paratype (UId). *35 mi. W. of Yakima,* V-8-49, Francis Ritz, 1 paratype (UId). *Mt. Adams,* VI-11-41, 4 paratypes (Fender). *Ellensburg,* V-5-41, Lewis, 1 paratype (UW). *Virden,* IV-23-36, J. Wilcox, 1 paratype (OrSU).

(57) **Silis (Silis) lobata** Green, new species.

Holotype, male; Gifford, Idaho, 2,900 ft., V-27-47, W. F. Barr. In collection of California Academy of Sciences on indefinite loan from the University of Idaho. CAS type number 9054.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, narrow in front and broad at base, connecting anterior and basal black borders. Underside of prothorax fulvous each side, lateral borders black.

Pronotum similar to figure 29P. Genitalia as in figure 57. In ventral view, basophyses divergent, straight, tips visible each side of ventral lobe of tegmen, attaining posterior margin of dorsal plate exterior to marginal tooth each side. In lateral view, basophyses curving upward distally. Laterophyses straight and rather stout in lateral view; appendix conspicuous, not surpassing tip of laterophysis. Median lobe of aedeagus broadly subtriangular in lateral view. Length 5.5 mm.

Distribution. IDAHO: *Gifford,* 2,900 ft., V-27-47, W. F. Barr, holotype (CAS).

(58) **Silis (Silis) vulnerata** LeConte.

Silis vulnerata LeConte, 1874, Trans. Amer. Ent. Soc., vol. 5, p. 61.

The type of this species, described from a single Oregon specimen without a more definite locality, is presumably lost, for it is not in the LeConte or in the Horn collection. It is accordingly necessary to select a neotype so the name may be retained in the list of recognizable species. This does not need to be a random choice, because apparently only one of the numerous species at hand, having the pronotum bimaculate as described by LeConte, occurs in Oregon. Nothing else in LeConte's description is of any identification value, the only known differentials being derived from the male genitalia. One other species of the "*vulnerata*" group has been taken in Oregon, *S. dentigera.* It has the disk of the pronotum entirely fulvous. This character is not invariable, but it is the only available evidence of identity.

Neotype, male; Tumalo, Oregon, V-1-49, from the K. M. Fender collection, Deposited in the LeConte collection at the Museum of Comparative Zoology.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, broad at base and narrowing anteriorly, not quite attain-

ing anterior black border. Underside of head in front, and of prothorax except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 58. In ventral view, basophyses diverging, curving slightly inward distally, tips not visible each side of ventral lobe of tegmen, attaining posterior margin of dorsal plate exterior to marginal tooth each side. In lateral view, lower margin of basophyses uniformly arcuate. In lateral view, laterophyses stout, somewhat L-shaped, lower margin bending rather abruptly upward at about distal third forming an obtuse angle, upper margin concavely arcuate, tip acute; appendix large, surpassing tip of laterophysis. Length 5.75 mm.

Variations. The median pronotal vitta varies by reduction, and may occasionally extend less than half way to the apex and be confined to the median basal impression. Length 5–6 mm.

Distribution. OREGON: *Tumalo,* V-1-49, neotype (MCZ); 33 males, 2 females (Fender, CAS 1 male). *Lake County: Fossil Lake,* V-16-57, 2 males (Fender); 2 males (OrSU). *Redmond,* IV-20-39, Schuh and Gray, 1 male (Schuh).

(59) **Silis (Silis) parallela** Green, new species.

Holotype, male; Richter Pass, British Columbia, III-29-41, H. Leech. In collection of California Academy of Sciences. CAS type number 9104.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, narrow and nearly interrupted in front, broad at base, connecting anterior and basal black borders. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 59. In ventral view, basophyses subparallel, feebly arcuate, outer margins convex, tips not visible each side of ventral lobe of tegmen, attaining posterior margin of dorsal plate exterior to marginal tooth each side. In lateral view, lower margin of basophyses subangulate. In lateral view, laterophyses stout, nearly straight, symmetrical, narrowing to apex; appendix large, slightly surpassing tip of laterophysis. Length 6 mm.

Variations. In one example, from Oliver, the subangulation of the lower margin of the basophyses, in lateral view, is much less apparent. Length 4.5–6 mm.

Distribution. BRITISH COLUMBIA: *Richter Pass,* III-29-41, H. Leech, holotype, 1 paratype, 1 female (CAS). *Osoyoos,* V-23-25, E. R. Buckell, 1 paratype (CAS); same, V-3-54, Roy Scott, 2 paratypes, 1 female (UBC). *Oliver,* V-19-59, E. E. MacDougall, 1 paratype (CNC).

(60) **Silis (Silis) constricta** Green, new species.

Holotype, male; Republic, Washington, V-7-36, G. R. Hopping. In collection of California Academy of Sciences. CAS type number 9105.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, narrow in front and broad at base, connecting anterior and basal black borders. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 60. In ventral view, basophyses feebly diverging, nearly straight, tips not visible each side of ventral lobe of tegmen, attaining posterior margin of dorsal plate exterior to marginal tooth each side. In lateral view, basophyses very stout, constricted at tip. In lateral view, laterophyses slender, curving downward at about distal third; in dorsal view, slender, not expanding distally; appendix minute, setiform. Length 5 mm.

Variations. In the paratype the pronotum is nearly all black, the fulvous areas each side much reduced. Length 4.5–5 mm.

Distribution. WASHINGTON: *Republic*, V-7-36, G. R. Hopping, holotype, 1 paratype (CAS).

(61) **Silis (Silis) barri** Green, new species.

Holotype, male; Wawawai, Whitman County, Washington, IV-4-49, Ralph Schopp. In collection of California Academy of Sciences on indefinite loan from the University of Idaho. CAS type number 9050.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, narrow in front and broad at base, connecting anterior and basal black borders. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 61. In ventral view, basophyses divergent, straight, attaining posterior margin of dorsal plate exterior to marginal tooth each side. In lateral view, lower margin of basophyses feebly arcuate. In lateral view, laterophyses slender, widest and bending subrectangularly downward near middle of length; in dorsal view, slender, not expanded distally; appendix minute, setiform. In lateral view, median lobe of aedeagus broadly subtriangular. Length 5 mm.

Variations. The subtriangular outline of the median lobe of the aedeagus varies by the withdrawal of the shorter upper part within a cavity formed by the overlapping sides of the longer lower part.

Distribution. WASHINGTON: *Wawawai, Whitman County,* IV-4-49, Ralph Schopp, holotype (CAS); 2 paratypes (UId). *Wawawai,* V-12-48, 1 paratype (USNM). *Pullman,* IV-32, Bales, 1 paratype (UW).

(62) **Silis (Silis) insolita** Green, new species.

Holotype, male; "W. T." (Washington Territory). In collection of Academy of Natural Sciences of Philadelphia.

Body and appendages deep black; pronotum fulvous with all borders black, a black median vitta, narrow in front and broad at base, connecting anterior and basal black borders. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 29P. Genitalia as in figure 62. In ventral view, basophyses subparallel, feebly arcuate, outer margins convex, tips not visible each side of ventral lobe of tegmen. In lateral view, basophyses strongly arcuate, failing to reach posterior margin of dorsal plate (possibly not a normal position). Dorsal plate with usual marginal tooth each side. In lateral view, laterophyses very slender, curving slightly downward distally; in dorsal view, nearly straight, somewhat expanded distally; appendix not apparent. Length 4.5 mm.

DISTRIBUTION. "W. T." (Washington Territory, includes Oregon), holotype (ANSP).

(63) **Silis (Silis) pallida** Mannerheim.

Silis pallida MANNERHEIM, 1843, Bull. Moscou, vol. 2, p. 246.

Head and appendages black. Pronotum flavate, anterior and basal borders black, lateral borders more or less dusky. Scutellum black. Elytra flavate; sutural bead, lateral borders narrowly, and apices, dark. Underside black, prothorax pale with lateral borders dark. Legs largely black.

Pronotum similar to figure 30P. Genitalia as in figure 63. In ventral view, basophyses subparallel or somewhat diverging, not attaining posterior margin of dorsal plate. In posterior view, emargination of dorsal plate with prominent acute basal angles, these partly visible in direct lateral view as an obtuse anteapical projection extending below upper margin of lateral incisure of tegmen. Laterophyses rather stout, curving slightly upward in lateral view, nearly straight in ventral view. Ventral lobe of tegmen subtriangular, apex more or less acute, usually extending as far posteriorly as dorsal plate. In dorso-ventral view, median lobe of aedeagus narrowly subtriangular, slender distally. Length 5.25–6.5 mm.

Rare in collections, only fifteen males of this species have been seen. It was described by Mannerheim from Sitka, Alaska. A National Museum specimen from that locality constitutes the determining factor in its identification. It differs from all other members of the "*pallida*" group in the shorter basophyses not attaining the posterior margin of the dorsal plate. No variation of importance has been noted.

DISTRIBUTION. ALASKA: *Sitka,* VI-16, Harriman Expedition, T. Kincaid, 1 male (USNM). BRITISH COLUMBIA: *Metlakatla,* Wickham, 2 males (USNM). *Massett, Queen Charlotte Island,* Rev. Keene, 1 male (USNM); same, VI-3-57, E. E. MacDougall, 1 male (CNC). *Zymagotitz River, 6 mi. W. of Terrace,* VI-20-60, W. W. Moss, 1 male (CNC). *Tyee, 27 mi. E. of Prince Rupert,* VI-24-60, B. S. Heming, 1 male (CNC). *Prince Rupert,* VI-15-

59, G. G. Scudder, 3 males (UBC); same, VI-1926, R. W. Pillsbury, 1 male (UBC). *Kwina Point, Sandspit, Queen Charlotte Island,* VI-26-46, M. G. Thomson, 1 male (UBC). OREGON: *Olney,* VI-15-25, Van Dyke, 3 males (CAS).

(64) **Silis (Silis) insperata** Green, new species.

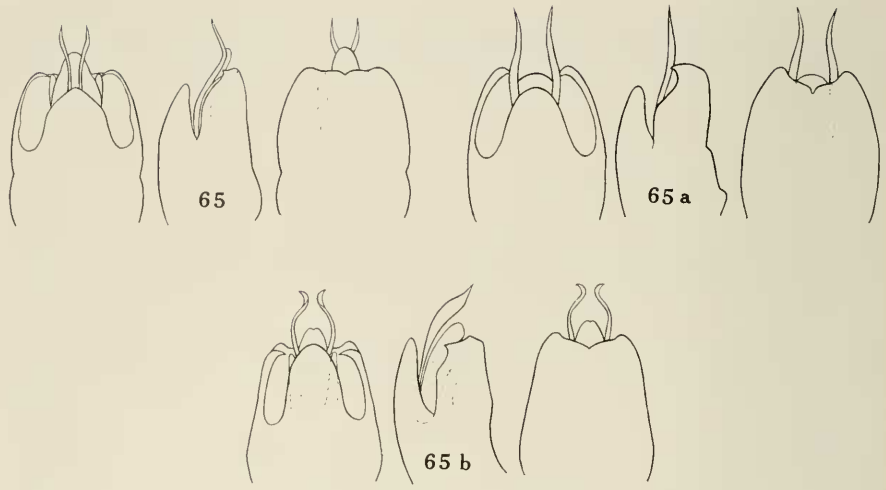
Holotype, male; Homestead Inn, Mt. Hood, Oregon, VII-2-27, Van Dyke. In collection of California Academy of Sciences. CAS type number 9106.

Head and appendages black. Pronotum flavate with all borders black, basal black border extending forward in median impression, not attaining anterior black border. Scutellum black. Elytra flavate; sutural bead, lateral borders, and apices, black; lateral black border expanding toward apex. Underside black, prothorax pale with lateral borders black. Legs and coxae black.

Pronotum similar to figure 30P. Genitalia as in figure 64. In ventral view, basophyses subparallel, attaining posterior margin of dorsal plate. Laterophyses slender, nearly straight in lateral view, curving somewhat inward and reversing distally in dorso-ventral view. Ventral lobe of tegmen extending about as far posteriorly as dorsal plate. In dorso-ventral view, median lobe of aedeagus narrowly subtriangular, slender distally. Length 5 mm.

Variations. The elytra are entirely black in a few specimens, otherwise normal, from Siltcoos Lake and Gardiner, Oregon. The forward extension of the basal black border of the pronotum may be much reduced, or entirely lacking. Rarely the lateral black borders of the elytra are narrow throughout. Three males have been noted in which the ventral lobe of the tegmen is deeply and narrowly emarginate. This is an accidental deformity that has been found also in the "*cava*" group. The ventral lobe, typically subtriangular with the apex acute, varies in length and shape with the sides sometimes convex and the apex more or less obtuse. The median lobe of the aedeagus may be partly expanded, obscuring its normal shape. In this case there is usually visible in ventral view a narrow median longitudinal convexity each side of which rest the laterophyses. The laterophyses may curve definitely downward in lateral view, reversing slightly upward distally. Length 4.5–5.75 mm.

Distribution. OREGON: *Homestead Inn, Mt. Hood,* VII-2-27, Van Dyke, holotype, 9 paratypes (CAS). *Elk Lake,* VII-3-38, K. Fender, 3 paratypes (CAS); VII-9-39, K. M. Fender, 2 paratypes (Fender). *Cannon Beach,* VI-16-27, Van Dyke, 1 paratype (CAS). *Corvallis,* VI-11-25, Van Dyke, 1 paratype (CAS). *Siltcoos Lake,* VI-20-34, Bryant, 6 paratypes (CAS). *McMinnville,* VI-25-42, 1 paratype (Fender). *Sheridan Peak, Yamhill County,* VII-12-42, 8 paratypes (Fender). *Still Creek, Mt. Hood,* VII-17-47, VII-15-54, 4 paratypes (Fender). *Government Camp,* VII-5-42, 3 paratypes (Fender). *Mt. Hood,* 3,000–6,000 ft., VI-20-25, 1 paratype (Fender). *Glenada, Lane County,* VI-16-52, B. Malkin, 1 paratype (Fender). *Florence, Lane County,*



FIGURES 65–65b. Male genitalia; ventral, lateral, and dorsal views arranged, in that order from left to right.
FIGURE 65. *Silis* (*Silis*) *maritima* Van Dyke.
FIGURE 65a. *Silis* (*Silis*) *maritima* complex, Woods, Tillamook County, Oregon.
FIGURE 65b. *Silis* (*Silis*) *maritima* complex, Newport, Oregon.

VI-14-50, Malkin and Leeper, 1 paratype (Fender). *Gardiner, Douglas County,* V-14-49, F. M. Beer, 1 paratype (Fender). *Independence,* VI-6, 8-34, N. P. Larson, 2 paratypes (Schuh). *Eagle Creek,* VII-4-40, Joe Schuh, 1 paratype (Schuh). *Linn County, Monument Park,* VI-16-60, J. D. Lattin, 1 paratype (OrSU). *Wasco County, Mayer State Park,* V-23-59, 1 paratype (OrSU). *Portland,* V-28, 1 paratype (USNM). WASHINGTON: Near *Snowqualmie Pass,* VII-9-36, Van Dyke, 1 paratype (CAS). *Paradise Valley, Mt. Rainier,* 6,000–8,000 ft., VIII-2-19, Blaisdell, 1 paratype (CAS). *Paradise, Mt. Rainier,* VII-4-34, Bryant, 2 paratypes (CAS). *Longmires, Mt. Rainier National Park,* VII-12-36, Van Dyke, 2 paratypes (CAS). *Mt. Rainier National Park, Longmire Springs,* VII-26-53, K. M. Fender, 1 paratype (Fender). *Mt. Rainier National Park,* VI-26-62, 2 paratypes (Edwards). *Puyallup,* 40 ft., V-14-31, A. J. Hanson, 2 paratypes (CAS). *Seattle,* V-23-14, 7 paratypes; V-14-07, 2 paratypes (CAS); same, V-1951, B. Malkin, 1 paratype (Fender). *Sol Duc Hot Springs,* VI-24-36, Van Dyke, 1 paratype (CAS). *Skye,* VI-12, 19-36, 2 paratypes (Fender). *Berkeley Park, Mt. Rainier National Park,* VII-20-41, 1 paratype (Fender). *Factoria, King County,* VI-4-49, E. C. Johnston, 1 paratype (CNC). *Bremerton,* V-27-48, Don Frechin, 1 paratype (CNC). *Fort Lewis, Pierce County,* V-29-51, R. Schuster, 3 paratypes (UCB). *Bothell,* V-25 to VI-3-49, Geo. Schenk, 7 paratypes (UId). *Tenino,* Hubbard and Schwarz, 4 paratypes (USNM). *Easton,* 1 paratype (USNM). "W. T." (Wash-

ington Territory) 2 paratypes (AMNH). BRITISH COLUMBIA: *Steelhead,* V-31 to VI-20-33, H. B. Leech, 8 paratypes (CAS). *Pender Harbor,* G. R. Hopping; same, R. T. Turner, 7 paratypes (CAS, UBC 1). *Vancouver,* VI-3-30, V-22-30, H. B. Leech, 2 paratypes (CAS); same, V-10-31, H. B. Leech, 2 paratypes (Fender); same, V-31-31, H. B. Leech, 1 paratype (CNC); same, VI-12-30, V-31-31, H. B. Leech, 3 paratypes (UBC); same, VI-29-32, R. Hopping, 1 paratype (UBC); same, VI-16-55, G. Stace Smith, 1 paratype (UBC); same, VI-11-27, G. J. Spencer, 1 paratype (UBC). *Mission,* V-25-30, E. E. Peden, 1 paratype (Fender). *North Bend,* Chas. Palm collection, 1 paratype (AMNH); same, VI-6, Hubbard and Schwarz, 4 paratypes (USNM). *Forestry Station, New Westminster,* VI-6-39, R. H. Longmire, 1 paratype (CNC). *Hope Trail,* VII-4-30, G. Stace Smith, 2 paratypes (UBC). *Langley Pr.,* V-20-30, K. Graham, 1 paratype (UBC). *B. A.,* Chas. Palm collection, 1 paratype (AMNH). No definite locality, 1 paratype (Fender).

This species may be composite, or, more likely, in a state of continuing evolutionary development. Typical specimens are easily recognized by the male genitalia; but in many others the variable shape of the ventral lobe of the tegmen, and supposed partial expansion of the median lobe of the aedeagus, produce a more or less confusing atypical appearance. The fact that these possibly atypical forms occur with typical ones in series from the same locality, and that no definable line of demarcation separates them, seems to justify the inclusion of all under this heading. Some material at hand has not been so included, but is labeled simply "pallida group." Among these are two specimens from near Orick, Humboldt County, California (CAS), the southernmost record for the group.

(65) **Silis (Silis) maritima** Van Dyke.

Silis pallida maritima Van Dyke, 1918, Jour. New York Ent. Soc., vol. 26, p. 170.

Body and appendages black, pronotum pale fulvous with all borders black, basal black border extending forward a variable distance in median depression, not attaining apical black border. Underside of prothorax, except lateral borders, fulvous.

Pronotum similar to figure 30P. Genitalia as in figure 65. In ventral view, basophyses subparallel, attaining posterior margin of dorsal plate. In ventral view, laterophyses subparallel, tips acute; in lateral view bending downward at about distal third or fourth, tips usually not at all reversing upward. In ventral view, median lobe of aedeagus broad, tip sometimes contracted to a triangular shape, then more or less abruptly widening. Ventral lobe of tegmen usually not extending as far posteriorly as dorsal plate. Length 4.25–6 mm.

Distribution. OREGON: *Marshfield,* IV-14-14, VI-11-14, Van Dyke (CAS). *Charleston, Coos County,* VI-17, 20-57, Fender, VI-17-52, Malkin (Fender).

One specimen, not differing in any particular from the above description, is labeled "Carmel, Cal., V-19-13, Van Dyke" (CAS). This is obviously a labeling error. A specimen from Humboldt County, California (Fender), is black with the pronotum entirely pale. It has been labeled "near maritima."

All specimens with flavate elytra keying here have been labeled "*Silis maritima* complex." Extremes in genitalic structure, figures 65a and 65b, indicate that at least two species are involved. Neither can be positively defined because of the occurrence of numerous intermediates of doubtful position. Members of this complex have been taken in the following localities.

Distribution. OREGON: *Waldport; Marys Peak, Benton County; Newport; Corvallis; Woods, Tillamook County; Sandlake; Baker Creek; McMinnville; Depot Bay; Xena; Little Nestuca River; Boyer; Gold Beach.* WASHINGTON: *Long Beach, Pacific County.*

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